ASSESSING THE BARRIERS TO ACCESSING PREVENTION OF MOTHER-TO-CHILD TRANSMISSION (PMTCT) SERVICES IN MARONDERA ZIMBABWE

By

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Assessing the Barriers to Accessing Prevention of Mother-To-Child Transmission (PMTCT) Services in Marondera Zimbabwe

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ABSTRACT

Background: Although Zimbabwe has invested in nationwide scale-up of prevention of mother to child transmission (PMTCT) services, high HIV-specific under-five mortality rates continue to be observed. This study aimed to document the potential reasons for low PMTCT uptake by examining factors constraining access to PMTCT services.

Methods: A cross-sectional facility-based survey based on structured face-to-face interviews (n=70)was combined with qualitative research that included two focus group discussions with pregnant women and 5 in-depth interviews with providers at antenatal care (ANC) clinics in Marondera.

Results: Financial constraints played a major role in access to care. Sixty-seven percent of the women reported financial constraints barred them from utilising ANC services and facility-based delivery which are their point of entry to accessing PMTCT services. Results showed a statistically significant positive correlation between wealth index and ability to pay for services ($p<0.001$), thus implying access to services is according to ability to pay, rather than need for services. Knowledge about PMTCT also played a role in women's ability to access and exercise PMTCT. Lack of knowledge was related to poor communication and inadequate information from health providers. Low quality of care including poor provider-patient interactions and generally unclean facilities were mentioned as deterrents to the use of services in some facilities. In addition, physical access to health facilities was limited in rural areas due to long distances and lack of transport.

Conclusions: Scaling up PMTCT services through integration into ANC can only be effective in achieving universal access if barriers faced by prospective clients are considered. Results suggest that key improvements would include examining alternative financing mechanisms that do not deter patients such as pre-payment mechanisms. In addition, while it is important to improve the state of health facilities, it is also necessary to find ways in which providers can engage with women in a way that improves the acceptability of services and improves their knowledge about PMTCT.

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ANC	Antenatal care
ARV	Antiretroviral
ART	Antiretroviral therapy
AZT	Zidovudine
EGPAF	Elizabeth Glaser Paediatric AIDS Foundation
FGD	Focus Group Discussion
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune deficiency Syndrome
ITN	Insecticide treated net
JLICA	Joint learning initiative on childhood AIDS
MOH	Ministry of health
MRCZ	Medical Research Council of Zimbabwe
MTCT	Mother-to-child transmission
NVP	Nevirapine
OOP	Out of pocket payment
PACTG	Paediatric AIDS Clinical Trial Group
PMTCT	Prevention of mother-to-child transmission
SdNVP	single dose nevirapine
SIDA	Swedish International Development Cooperation Agency
3TC	Lamivudine
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Fund
USD	United States Dollar
VCT	Voluntary counselling and testing
WHO	World Health Organisation
ZDHS	Zimbabwe Demographic Health Survey

CHAPTER 1

STUDY PROTOCOL

1.1 BACKGROUND

The main route of transmission of HIV in adults is undeniably through unprotected sexual interaction, but in children, it remains through mother to child transmission (MTCT or vertical transmission) (1). The risk of vertical transmission in the absence of an intervention is estimated to be 20 to 45% (2). To reduce this risk, treatment protocols were introduced based on findings from the PACTG 076 trial, which was conducted in the United States and France (3). Results from this trial showed a significant reduction in vertical transmission from 25% to 8% after administration of the antiretroviral Zidovudine (AZT). Modification of this regimen and additional caesarean section birthing and alternative infant feeding options, led to a further decline in the vertical transmission rate to between 2% and 5% (4). However, this protocol was costly, making it impracticable in resource-poor settings.

In 1999 and 2003, results from a Ugandan study (HIVNET 012) showed that a single dose of Nevirapine (sdNVP) for the mother at labour and the infant after birth was remarkably successful in reducing vertical transmission, even in the presence of continued breastfeeding (5 and 6). This approach seemed more feasible and cost-effective for developing countries (7), and was thus adopted as the main strategy for the prevention of mother to child transmission of HIV (PMTCT) in resource-poor settings.

Meanwhile in Zimbabwe, statistics indicated a rise in child mortality with under-five mortality rising from 59 to 102 deaths per 1,000 live births between 1985 and 1999 (8). This was attributed to various issues but most importantly to the increased cost of healthcare and the impact of HIV/AIDS (8).

With the dawn of prophylactic therapy for the unborn child, the treatment protocols for PMTCT were quickly adopted by the government of Zimbabwe and the JF Kapnek Trust (9). The Trust commenced a pilot programme in the peri-urban suburb of Epworth in 1999 (9). To initiate the program, they joined forces with the Zimbabwe Ministry of Health (MOH) and other local stakeholders. Additional pilot projects were carried out in five other sites: three utilising short-course AZT and two utilising sdNVP.

With high success rates from the pilot study, the Trust and the government, with financial support from The Elizabeth Glaser Paediatric AIDS Fund (EGPAF), began scaling up the PMTCT programme to a national level in 2001 (10). The minimum PMTCT package included antenatal care (ANC), voluntary HIV counselling and testing, and sdNVP.

The rapid geographic expansion in the first phase of programme roll-out between 2001 and May 2003 did not translate into high uptake of the services (10, 11). However, the second phase of expansion was commenced soon thereafter covering more ANC facilities thus improving physical access to PMTCT services (10, 11). Yet, a decade after PMTCT inception in Zimbabwe and despite apparent service availability, utilisation of PMTCT services by those in need is still very low and HIV-specific child mortality is still unacceptably high (12).

While scaling-up health programmes has been the mainstay of progressive reduction in the spread of HIV/AIDS, the fundamental issue lies in the ability to identify and eliminate any barriers to accessing these services. Without addressing such issues, the challenges of low uptake of PMTCT will continue to be a problem.

This study thus examines the access barriers to PMTCT services in semi-rural and urban areas of Marondera in Zimbabwe, and aims to provide guidance on how policies might be designed to overcome these barriers.

1.1.1 Overview of Zimbabwe

Zimbabwe is a land-locked country in southern Africa sharing borders with South Africa, Botswana, Zambia and Mozambique. It spans an area of 390,757 km2 with a population of 12.6million of whom 63% live in the rural areas (13, 14).

The demographic structure of Zimbabwe is typical of a developing country with children below the age of 15 years constituting almost 50% of the total population (13). Black ethnic groups comprise 98% of the population, the majority of whom (>80%) are Shona. Regarding religion, 75% of Zimbabweans attend Christian churches and less than 1% of the population is Muslim. Although Christianity is common, it is often combined with enduring traditional beliefs including ancestral worship.

Zimbabwe's main source of revenue is derived from the export of primary goods including agricultural products such as maize, cotton, tobacco and wheat, and minerals such as gold, diamond, iron, platinum and asbestos. However, trade suffered immensely due to economic and political instability in the nineties. In turn, coupled to structural adjustment programmes, Zimbabwe experienced rising unemployment (14). This consequently contributed to rising poverty and illness and low revenue generation for the economy (14).

The pattern of diseases in the population has not shown any significant changes within the last decade. The major cause of death for all ages remains HIV/AIDS which accounted for 67% of deaths in 2002 (15). Other leading causes of death are lower respiratory tract infections, tuberculosis, diarrhoeal disease, protein-energy malnutrition and war/violence.

1.1.2 The Marondera district

Marondera is situated in the Mashonaland east province, 72km east of the capital city Harare, and has a population of 154 677 (16). Marondera is a major farming region that markets timber, tobacco, corn, beef, and dairy products. It is an educational centre with a

number of elite private and government schools in the area. The district is also multi-cultural comprising a variety of ethnic groups.

There are 3 hospitals, 7 clinics, and 4 rural health centres in Marondera (16). In addition to primary preventive and curative services, clinics also offer PMTCT services and treatment of HIV-related opportunistic infections. The PMTCT program in Marondera is coordinated by a district coordinator under the ministry of health.

1.2 PROBLEM STATEMENT

By 2005 in Zimbabwe, the PMTCT programme had only managed to reach 40% of HIV positive mothers (11). Of those who were not able to use the service, approximately 40% of their children would be infected with HIV and would probably die before the age of two years (2). With such a catastrophe looming, it is no surprise that the MOH with the help of EGPAF and support from other organisations, continued with plans to improve access to PMTCT services by training health workers and equipping facilities with the necessary resources for PMTCT services.

However, under-five mortality in Zimbabwe is still too high relative to the target set by the Ministry of Health and Child Welfare in line with the millennium development goal 4 of reducing child mortality (86 per 1000 live births versus target 43 per 1000 live births) (17). More concerning is the cause of the high under-five mortality. HIV/AIDS accounts for 40% of deaths of children under the age of five in Zimbabwe (15). Furthermore it is estimated that 90% of HIV infection in children under 15 is due to vertical transmission (18).

It is indisputable to say there is a problem in the system, a gap between policy commitments to reduce MTCT and the success of PMTCT interventions. Therefore this study examines what barriers exist to accessing PMTCT services in the public sector and how these can be addressed to make the programme more accessible in Zimbabwe.

1.3 JUSTIFICATION

Worldwide, MTCT accounts for 20% of HIV transmission making it the second greatest cause of HIV transmission after unprotected sexual interaction (19). PMTCT remains a

highly effective programme in reducing vertical transmission, provided there is adequate access to and utilisation of the services.

However, in Zimbabwe access to PMTCT services has still not been evaluated. Greater emphasis has been placed on increasing the number of facilities registered to offer PMTCT services and less on the availability of quality services, affordability and acceptability of these services, and knowledge and attitudes of the beneficiaries. Whilst advances have been made in other countries to assess these issues, it remains a matter of local context that defines the necessary steps to be taken. As the Joint Learning Initiative on Children and HIV/AIDS (JLICA) pointed out, policy makers need to consider local and regional barriers in access to health care in order for future programmes to be well integrated into ANC services (20). If the health system of Zimbabwe is to be organized in such a way as to increase PMTCT service utilisation, the patient's perspective on the difficulties of accessing these services needs to be better understood.

This study thus has relevance in that it will identify potential reasons for the small impact that PMTCT has had in Zimbabwe and will help policy makers in designing effective implementation strategies which will assist the health system in achieving the millennium development goal of reducing child mortality.

1.4 RESEARCH AIM

Given this background, the aim of this study is to determine reasons for low PMTCT uptake by examining factors constraining and facilitating access to PMTCT services.

1.5 SPECIFIC OBJECTIVES

1. To assess the availability of PMTCT services
2. To assess the affordability of PMTCT services
3. To determine the factors affecting the availability and affordability of PMTCT services
4. To evaluate attitudes of pregnant women towards PMTCT services
5. To determine women's knowledge about PMTCT
6. To determine the factors associated with women's attitude towards and knowledge of PMTCT

7. To provide recommendations on improving access to PMTCT services

1.6 LITERATURE REVIEW

The United Nations General Assembly Special Session on AIDS (UNGASS) declaration of 2001 (21):

"*By 2005, reduce the proportion of infants infected with HIV by 20 per cent, and by 50 per cent by 2010, by: ensuring that 80 per cent of pregnant women accessing antenatal care have information, counseling and other HIV prevention services available to them*."

1.6.1 Introduction

Child mortality has been rising steadily in Zimbabwe since the mid-eighties (8). This was mainly attributed to the direct and indirect impact of the HIV /AIDS epidemic and the concomitant rise in poverty levels (17). While the adult HIV prevalence rate in Zimbabwe is reported to be declining (22), the question remains as to why the HIV-specific child mortality rate has continued to be high, years after the PMTCT programme was introduced.

1.6.1.1 What is PMTCT?

HIV can be transmitted from an HIV positive mother to her child either during pregnancy, labour, delivery or breastfeeding (3). PMTCT is thus a set of interventions centred on preventing the transmission of the virus from a mother to her child (4). Interventions include:

- Family planning to avoid unplanned pregnancies
- Voluntary counselling and testing (VCT)
- Antiretroviral therapy(ART) for mother and infant
- Safe delivery practices (e.g. caesarean section)
- Safe infant feeding practices

Table 1 shows the ART options proposed for PMTCT. These are mainly short-course ART for the HIV positive mother although sdNVP is also used (23, 24).

As seen in table 1, the recommended regimens require the pregnant mother to commence ARVs as early as the 14th week of pregnancy. This option has a much higher efficacy in

Table 1 WHO PMTCT Guidelines 2006 & 2010

	Pregnancy	labour	After birth: mother	After birth: infant
Recommended 2010 Option A	AZT from 14th week	sdNVP, AZT+3TC	AZT+3TC for 7 days	Daily NVP till 7 days after breastfeeding has finished (maximum 1 year breastfeeding)
Recommended 2010 Option B	Triple ARV from 14th week	Continue triple ARV	Continue triple ARV till 1 week after breastfeeding stops (maximum 1 year breastfeeding)	Daily NVP for 6 weeks
Recommended 2006	AZT after 28 weeks	SdNVP,AZT+3TC	AZT+3TC for 7 days	sdNVP, AZT for 7 days
Alternative 2006 (higher risk of drug resistance)	AZT after 28 weeks	sdNVP	-	sdNVP, AZT for 7 days
Minimum 2006 (less effective, less risk of drug resistance)	-	sdNVP, AZT+3TC	AZT+3TC for 7 days	sdNVP
Minimum 2006 (less effective, higher risk of drug resistance)	-	sdNVP	-	sdNVP

ARV: Antiretrovirals
AZT: Zidovudine
3TC: Lamivudine

preventing vertical transmission (25). Regimens that propose sdNVP alone carry a higher risk of drug resistance. Studies have shown an increased risk in development of resistance to future ART if the mother or infant (if infant becomes infected) is exposed to this regimen. Nevirapine alone reduces chances of vertical transmission by 47% (26). Short-course therapies such as AZT at 14-28 weeks in combination with Nevirapine reduce transmission by as much as 80%. Hence, where feasible, sdNVP is combined with AZT and Lamivudine (3TC).

1.6.1.2 Breastfeeding and HIV

The chances of transmitting HIV from a mother to her child through breastfeeding are between 5 and 20% (2). Safer infant feeding practices and concomitant ART during breastfeeding are therefore recommended. Mothers with HIV are also advised to replace breastfeeding with formula feed whenever it is acceptable, feasible, affordable, sustainable and safe (4 and 27).

A lot of controversy surrounds the replacement of breast milk. For instance, breastfeeding is known to lower the risk of infant mortality since the child receives protective antibodies from the mother which help prevent childhood disease such as diarrhoea, pneumonia, neonatal sepsis and acute otitis media (28). However, there is no substantial evidence to suggest that an HIV infected mother cannot confer the same immunity to her child through breastfeeding (29). It becomes a case of 'one's choice of poison' whether to breastfeed or not and in most African settings the culturally acceptable way of feeding a child remains breastfeeding (30).

Since breastfeeding is the norm, not breastfeeding a child is commonly associated with being HIV positive. HIV positive women hence risk being identified as HIV positive and fear facing discrimination, should they not practice breastfeeding (30). Another concern in developing countries is the availability of safe water for preparing the formula milk. In Zimbabwe, while most areas are serviced with running water, it is the safety of this water that poses a problem. In 2008, a severe cholera outbreak killed at least 4000 people and infected about 100 000 others (31). The outbreak was a direct result of unclean water and poor sanitation as the country ran out of purification chemicals for treating drinking water. Using such unsafe water for formula milk could hence have devastating results for the child.

It is quite common however, to find women practising breastfeeding in conjunction with feeding other foodstuff to their child. This form of feeding, also known as mixed feeding, is generally regarded as more dangerous than exclusive breastfeeding (32). The danger lies in the natural response occurring in the infant's stomach lining after feeding. It is

purported that mixed feeding damages this lining making any viral pathogens more likely to enter into the blood stream thus increasing chances of HIV transmission. Unfortunately, circumstances, such as low volumes of breast milk and a busy lifestyle, make it unavoidable to practice mixed feeding for most women in developing nations. In the absence of ARVs for the mother and the baby, this could lead to a higher HIV transmission rate to children (23).

1.6.2 PMTCT in Zimbabwe

Figure 1 shows the PMTCT registered sites in Zimbabwe in 2003. The progress report on PMTCT coverage in Zimbabwe showed that only 55% of ANC facilities provided testing and ARVs for PMTCT in 2008 (33).

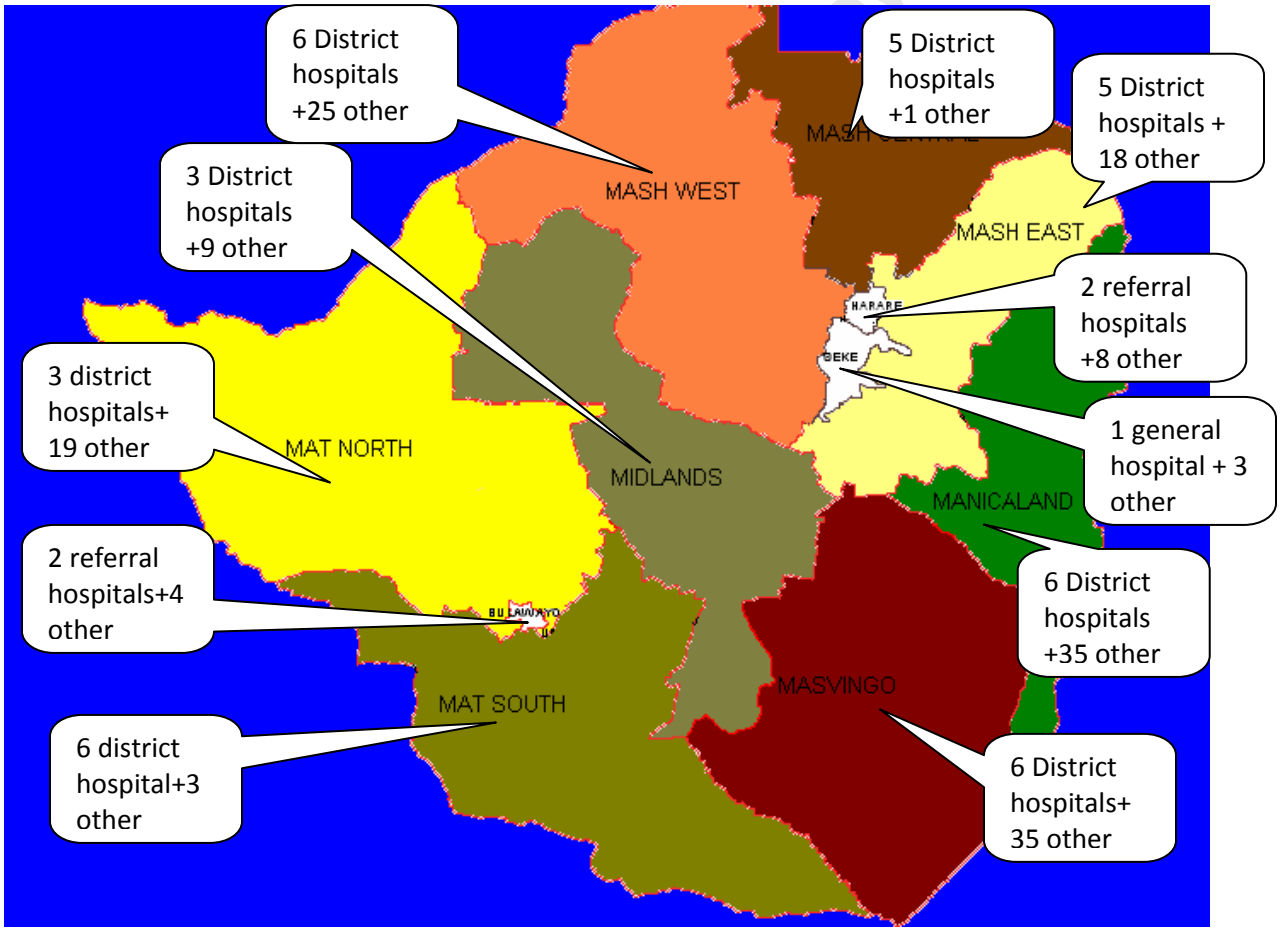


Figure 1 PMTCT registered sites in Zimbabwe, 2003. (Mahomva et al 2006)

PMTCT is integrated into ANC and thus forms an integral part of a pregnant woman's services. An average 93% of pregnant women attend ANC at least once according to the

Zimbabwe demographic health survey (ZDHS) (34), meaning a substantial number of pregnant women have physical access to PMTCT. However, literature shows a tendency for women to drop-out of ANC after their first visit particularly if faced with financial constraints or if the individual is found to be HIV positive (35-39).

Whilst it is expected that higher ANC attendance results in higher PMTCT utilisation, the availability of PMTCT at ANC services does not seem to guarantee that women will complete the use of services. A study carried out in Zimbabwe (11) showed a decreasing number of women at each stage of the process from ANC visit to PMTCT drugs as seen in figure 2. It is not evident why such a trend is observed, but this declining utilisation pattern results in missed opportunities to identify HIV positive women and hence exposes women to a higher risk of transmitting HIV to their child.

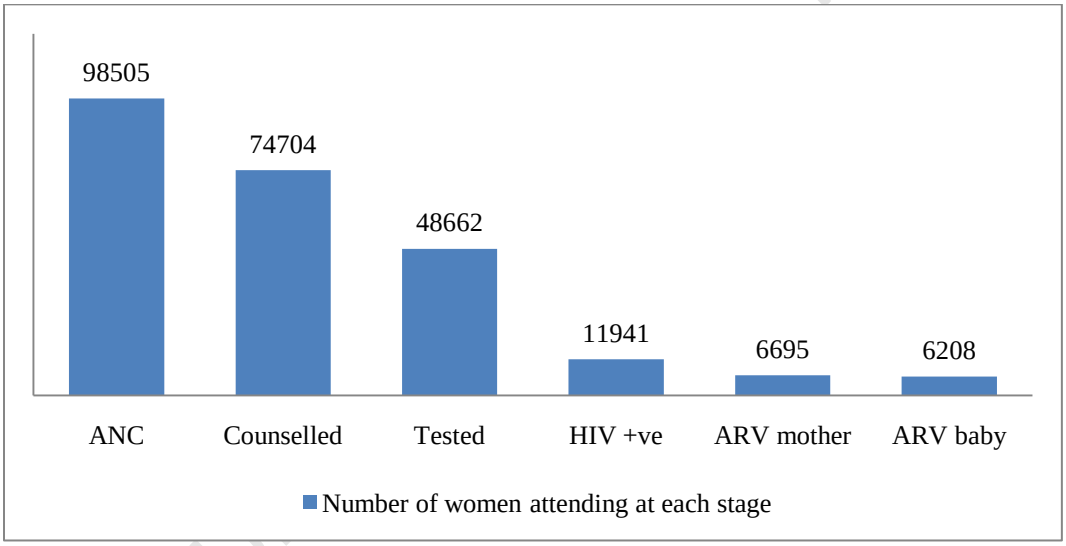


Figure 2 Trend in utilisation of PMTCT services in Zimbabwe (Mahomva *et al* 2006)

1.6.3 Potential barriers to uptake of PMTCT

1.6.3.1 Approach to HIV counselling and testing

Two strategies exist for HIV counselling and testing, the 'opt-in' approach and the 'opt-out' approach (40). Currently, in Zimbabwe the opt-in approach is practiced, whereby the

individual is voluntarily counselled and screened[1]. A study done by Bahwere et al (41) showed that a more effective way of ensuring more women are tested is the opt-out approach whereby counselling and testing is a routine part of the ANC package and women make the choice to 'opt-out' if they do not want to be tested. The opt-out approach is thought to improve the perception of testing as testing is customary for every woman.

HIV testing is generally perceived as a prescription for speedier death hence causing much fear and anxiety. In Uganda, people expressed reservations about testing (42). They feared that knowing one's status would speed up death due to worry and stress, and did not trust staff to keep the matter confidential or that the medication would make them better.

1.6.3.2 Difficulty in disclosure

On the issue of why women who have tested positive for HIV do not go on to take the preventive drugs, some studies suggested disbelief of results or difficulty in disclosure, hence preventing the individual from accepting preventive drugs or replacing breastfeeding (43). Studies show that an effective way of avoiding difficulty in disclosure and consequently improving use of and adherence to PMTCT services is involving the partner in ANC and PMTCT (44).

1.6.3.3 Poor access to PMTCT

It has been proposed that, while the methods of preventing vertical transmission are effective, implementing these interventions in sub-Saharan Africa and other developing areas of the world is difficult due to cultural and economic barriers (45). Worldwide in 2006 the proportion of HIV positive pregnant women receiving ARVs was only 23% (46). This low coverage implies there are other barriers to full coverage of populations. In order to utilize services, women need to have access to the services. Access, as defined by McIntyre et al (47), is the empowerment of an individual to utilize health services. In

[1] The approach to counselling and testing for pregnant women had been changed to the opt-out approach by the time of the study, January 2010.

their definition, they propose a framework which incorporates three dimensions of access: availability, affordability and acceptability.

Availability refers to physical access, that is, whether or not the appropriate health services are available in the right place at the right time (47). Although PMTCT in Zimbabwe is integrated into an already existing ANC program, services still need to be evaluated to guarantee full physical access to PMTCT. The most frequently identified issues pertaining to availability are staff, time, resources and location. Staff shortages and low morale can be a significant barrier especially when it comes to counseling. Better training, greater support and motivation can improve the efficiency of existing staff. In addition to staff, the PMTCT program requires availability of family planning services, HIV test kits, preventive drugs and sundries.

Other issues pertaining to availability include the type and range of services available as well as the operating hours of the health facility. Where operating hours are concerned, women tend to require flexible facility operating hours since they are often faced with many responsibilities including caring for their families and working. One programme in rural India boosted attendance to ANC by setting up a Saturday clinic as weekday visits were difficult for women (48).

Affordability refers to the ability for one to pay for the necessary services and also includes costs incurred in the process of receiving health care such as transport. Where the distance to the health facility is large and transport costs are high, access can be hampered.

Acceptability refers to cultural access as well as the quality of the interaction between the provider and the patient (47). It encompasses issues of trust in the provider, the quality of services provided, knowledge about the intervention and cultural or social beliefs associated with it. The poor quality of services has been cited as the main reason for low institutional deliveries in Zimbabwe (34 and 49). Failing to deliver at a health facility however, reduces the likelihood of administering sdNVP. Hence, to avoid this, pregnant

women may be given their dose of nevirapine upon attending ANC with the expectation that should the woman choose to deliver at home she can at least take the drug since she already has it (50). However, a study in Zambia found that it does not follow that she may do so (51). It was reported that up to a third of those given the drug did not ingest it mainly due to concerns about discrimination.

There is also evidence to suggest that the relationship that the patient has with the provider affects their ability to utilise services (47). For instance, gender, age or language barriers may affect service uptake. Where a woman is addressed by a male provider, she may feel uncomfortable discussing "female" issues, or where a much younger health worker addresses sensitive issues about sexual reproduction with a much older patient, the service becomes culturally unacceptable for the patient and may hinder access to that service.

1.6.4 Fragile states: Political climate and economic instability

Health systems have been known to become eroded over time in the face of prolonged conflict within a state or in fragile states (52). The presence of conflict, be it politically motivated or influenced by ethnicity, leads to disruptions in the supply of quality health care as institutions may become run-down and human resources dwindle. Services become fragmented and differentially available depending on where conflict-affected areas are located. Governmental financial resources may also become scarce as the economy declines while individual and household financial resources are challenged due to rising unemployment and unstable economy. All these factors affect access to healthcare leading to rising morbidity and disease-related mortality.

In Zimbabwe, the political climate has rapidly deteriorated within the last 2 decades resulting in increased election-related violence and economic instability (53). Such political and economic deterioration can adversely affect the health system and individual households leading to reduced access to health care.

1.6.5 Conclusion

Although there is great commitment to expand the coverage of PMTCT, the fact remains that the majority of women and infants who require these services do not receive them. It is evident that there can be a number of reasons why such a situation may exist. Therefore, it is important to establish the cause of failure in order to have more effective programs and help in the fight against HIV/AIDS.

1.7 METHODS

1.7.1 Study site

Marondera is selected because of the extent of urbanisation and high HIV prevalence. The population is diverse in terms of cultures (due to different ethnicity) and socio-economic status (due to different opportunities to earn income between rural and urban areas). This introduces variety in the factors affecting affordability, knowledge about PMTCT and utilisation of ANC. Furthermore, the HIV prevalence rate in Marondera is quite high at an estimated 30% or more of antenatal attendees (54). This should provide a large population in need of PMTCT services.

1.7.2 Population

Pregnant ANC attendees at public health facilities (clinics and hospital)

Inclusion criteria: All pregnant women over the age of 18 at the clinic

Exclusion criteria: Women at delivery and those unable or unwilling to consent

A positive HIV status could have been used as an inclusion criterion, however, HIV is still highly stigmatised in Zimbabwe and there is no sampling frame from which to extract a sample of HIV positive pregnant women. The absence of a sampling frame hence makes it difficult to identify and approach HIV positive pregnant women from a mixed pool without exposing them to the risk of discrimination.

1.7.3 Study design

Both quantitative and qualitative approaches will be used in the research process as this method provides a better understanding of the problem (55). Initially a quantitative cross-

sectional survey will be conducted followed by qualitative interviews with providers and focus group discussions with women.

1.7.3.1 Cross-sectional survey

A cross-sectional survey will be conducted at public health facilities in the district. The data collection tool will be a structured questionnaire with closed-ended questions. Trained fieldworkers will conduct face-to-face questionnaire-based interviews on all qualifying pregnant women visiting the facilities. Each interview is envisaged to last 30 minutes. The questionnaire will be printed in English and Shona and will have the following sections:

Section A: Socio-economic and demographic characteristics of the respondent such as age, marital status, occupation, level of education and religion
Section B: Knowledge about PMTCT
Section C: Attitudes towards PMTCT services and the acceptability of these services
Section D: Availability and affordability of PMTCT services

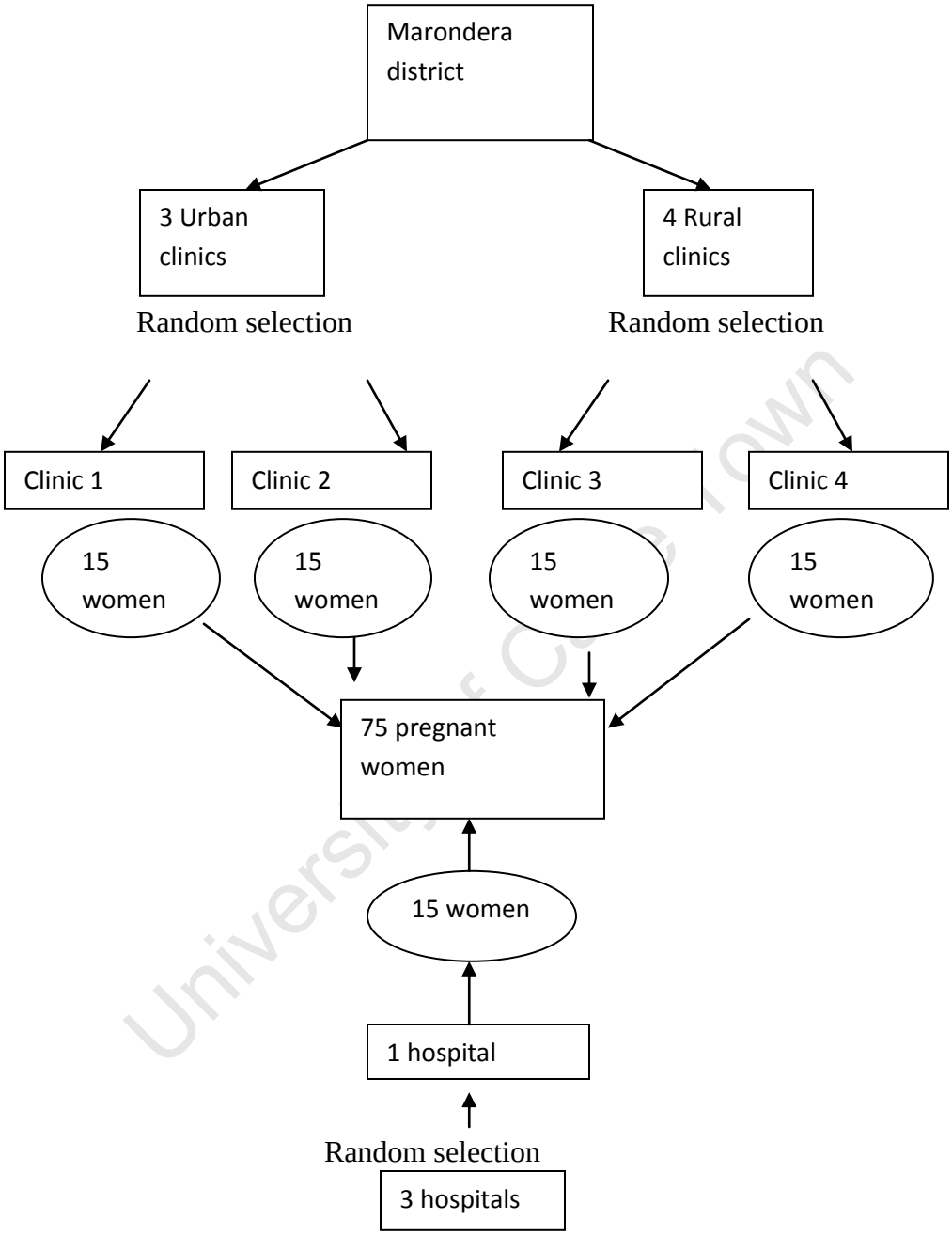
A pilot study will be conducted prior to the final study being carried out. This will determine if any areas should be refined on the questionnaire and assess whether the questions are set at the right level of understanding.

Sample size

Commonly the sample size for quantitative studies is calculated based on the desired level of confidence and acceptable margin of error (56). Such calculations are made so as to reduce uncertainty and enhance the precision of findings thus to be sure findings from the sample truly reflect the population of interest. However, the goal of this study is to identify various issues pertaining to access that women are concerned with and as such all mentioned barriers are considered important. Consequently, the level of confidence and the margin of error will not be used in calculating the sample size.

Sampling strategy

This is diagrammatically represented below



- The district will be stratified according to extent of urbanisation into urban and rural areas
- Two clinics will be chosen in each stratum and 15 women interviewed at each clinic.

- A hospital will be randomly selected among the 3 hospitals in the district and 15 women will be interviewed from this site.

1.7.3.2 Focus group discussions (FGDs)

A qualitative survey will be conducted in order to validate the information obtained from the quantitative survey. The FGD is chosen for this purpose because due to the group dynamics that it raises, it has the potential to elucidate information that may not have been previously mentioned in questionnaires or information that requires further clarification (57). The FGD will also spark interactive debate and generate discussion among the women as they see the similar or different concerns their peers have.

Sample size and sampling strategy

The population will be stratified into rural and urban population groups. Two FGDs will be conducted, one in the rural and the other in the urban area, both comprising pregnant women who have attended ANC and have been notified by nurses about the potential to participate in the FGD. Each FGD is envisaged to be attended by 6 to 10 women which is a manageable size and to last approximately 1 hour (57). Key topics in the FGDs will include key challenges faced in accessing PMTCT and knowledge about PMTCT. The FGDs will be tape recorded and notes will be taken during the discussion in order to complement the recorded information. The recorded material will then be transcribed.

1.7.3.3 In-depth interviews with providers

In a bid to validate information obtained from FGDs and questionnaires, semi-structured interviews will be conducted with health providers at the 5 health facilities. This is a form of triangulation, a process of using multiple data collection methods, data sources, analysis or theories, in order to check the validity of findings (58). Topics in in-depth interviews will include the guidelines regarding PMTCT, the challenges faced in providing PMTCT services and the challenges perceived to be faced by women in accessing PMTCT services. These interviews will last approximately 20 minutes and will be tape-recorded and transcribed.

1.7.4 Data analysis

The cross-sectional survey questionnaires will be coded and entered into a database using the Epi Info program immediately after completing the interviews. Data will be quantitatively analyzed using STATA© 10 to obtain descriptive and analytic statistics. Analysis will include univariate and multivariate regression to identify the relationships that exist between some variables and access to health services and hence determine factors affecting availability, acceptability and affordability. The covariates used in the analyses will be selected based on the conceptual framework for access by McIntyre et al (47).

Furthermore, to ascertain the factors affecting affordability of services, an index of socio-economic status will be constructed through the Principal Components Analysis (PCA) technique using ownership of household assets (59).

Qualitative analysis of transcribed FGD and provider interviews will be conducted simultaneously by a team of 3 researchers. Each researcher will independently read the written comments and transcribed data and group them into themes in a technique called immersion/crystallization which forms part of the broader grounded theory approach. It is defined as a process whereby researchers immerse themselves in the data they've collected by examining a portion of the data in detail, then temporarily suspending the process of examining in order to reflect on the analysis experience and attempt to identify themes noticed during the immersion process (60). The temporary suspension phase is followed by a return to the data, where the reflection process is fed back to the next immersion phase. These dual processes continue until all the data have been examined and patterns and claims emerge from the data that are meaningful and can be well articulated and substantiated. The team will then meet every 3 days to agree upon a common cataloguing of themes. Multiple reviews will be conducted until saturation is reached and the key themes are extracted.

1.7.5 Ethical consideration

Ethical approval will be obtained from the research ethics committee at the University of Cape Town (UCT) as well as the Medical Research Council of Zimbabwe (MRCZ) prior to conducting the study. The research will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki (61). This study seeks to determine barriers that pregnant women are faced with in accessing PMTCT services in the Marondera district of Zimbabwe. The findings will help formulate strategies in increasing uptake of PMTCT services in the future.

Approval to conduct the study will be sought from the head of each health facility. The intentions and the importance of the study will be explained to them and details of the procedures to be undertaken including potential risks and benefits to the participant will be given.

Consent to participate will be sought from individuals selected for the cross-sectional survey and the FGDs. Potential participants will be given full details of the nature and aims of the study and they will be free to decide whether or not to participate in the study without being coerced. Should they decide to partake of the interview, their written informed consent will be required. No consequences will be incurred if they decide not to take part or not to answer certain questions. Subject codes will be used for identification instead of names and any identifying information will be removed from the records and will only be accessed by the research team. The interview process will be conducted in an enclosed area to enhance participant's confidence and ensure maximum privacy. The interview will be conducted in the language chosen by the participant between English and Shona.

There will be no financial incentives awarded to participants. However, participation will contribute towards implementation strategies of future PMTCT scale-up programs thus participants will benefit from improved services in the future which are in line with the contextual preferences and concerns.

Participants may feel vulnerable disclosing their personal experiences and how this may influence their reputation in the community. The interviews may provoke anxiety or distress as they may be reminded of painful or unpleasant experiences or some difficulties they are currently facing. The interviewers will make every effort to respect the feelings of participants. All participants will be told that they should feel free not to answer questions which they are not comfortable with, or withdraw from the study at any time. Every effort will be made to ensure the participant's confidentiality is not breached.

Participants will be given contact details, where they can direct their questions either relating to the study or their rights as study participants. The benefits of the research will be made available to the participants and will be widely disseminated.

1.7.6 Dissemination of findings

The final report of the study will be made available to the Health Economics Unit, the Swedish International Development Corporation Agency (SIDA), the MRCZ, and the Ministry of Health and Child Welfare of Zimbabwe. The findings will also be published in a suitable academic journal.

1.8 PROPOSED STUDY BUDGET

Table 2 Study budget

S/No		Description	Rate	Quantity	Cost/$
1.	Transportation	Harare to Cape town (return)			550
		Car hire during fieldwork and pilot	$35/day	45days	1575
2.	Personnel	2 assistants (per diem)	$20/day	2×45days	1800
		1 for data capture (per diem)	$20/day	5days	100
		Accommodation (principal investigator)	$30/day	45days	1350
3.	Stationary	Printing and photocopying questionnaires	$0.07/page	10×250	175
		Photocopying consent forms	$0.07/page	4×250	70
		Clipboards	$5	3	15
		Pencils (2 per person)	$2	6	12
		Erasers(2 per person)	$2	6	12
		Pens(2 per person)	$3	6	12
		Printing of final report	$0.07/page	10×100	70
		Binding of final report	$5	10	50
4.	Translations	From English to shona(questionnaire and consent forms)	$30	1 person	30
5.	Communication	Telephone Internet Fax	$200		200
6.	Training	Refreshments during training Hiring venue for training	$5/person $25/day	3 2	15 50
7.	Miscellaneous	Unforeseen expenses	$100		100
	TOTAL				6186

1.9 WORK-PLAN

Table 3 Work plan

Activity	Aug /09	Sept /09	Oct /09	Nov /09	Dec /09	Jan /10	Feb /10	Mar/ 10	Apr /10	May /10	Jun /10	Jul / 10	Aug /10	Sept /10	Oct /10	Nov /10	Dec /10	Jan /11
Protocol dev																		
Ethical approval REC UCT																		
Ethical approval MRCZ																		
Train field-workers																		
Pilot study																		
Data collection																		
Data entering/cleaning																		
Data analysis																		
Literature review																		
Manuscript write-up																		
Policy brief write-up																		
Submission of final dissertation																		

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CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION TO THE LITERATURE REVIEW

Maternal and child health are the key indicators of a country's health status, level of socio-economic development, quality of and access to health care delivery services (1). Sub-Saharan Africa has the highest child mortality rates in the world (2) and also carries 90% of the need for prevention of mother to child transmission (PMTCT) of HIV (3). A key focus has therefore been to reduce the incidence of HIV among women and reduce vertical transmission of HIV through implementation of PMTCT strategies (3). PMTCT has seen the rate of vertical transmission falling drastically in some countries due to effective use of anti-retroviral (ARV) prophylaxis, safe delivery and safe infant feeding practices (4). However, in some resource limited settings like Zimbabwe the programme has not yet yielded favourable results: high HIV-specific morbidity and mortality rates continue to be observed (5). By 2004 HIV accounted for an average 10% of child mortality in Africa (6) while in individual countries such as South Africa and Zimbabwe, it accounted for over 40% of child mortality (5 and 7). With such high mortality rates, which are avoidable, the general consensus has been to increase the coverage of PMTCT services. Leading health organisations and governments have supported and encouraged the expansion of coverage through integration of PMTCT into existing services such as antenatal care (ANC). However, access to PMTCT services remains a challenge for most women in developing countries (8).

The aim of this literature review is to identify a conceptual framework that will guide an empirical investigation of access to health services in general and to PMTCT in Zimbabwe more specifically.

Because access itself is a key concept in the broader literature related to equity in healthcare, the first section of the literature review places access in context within this literature. The last section is then a review of empirical literature applying access conceptual frameworks in studying access to health care.

2.2 EQUITY AND HEALTH INEQUALITIES

Whilst most countries have adopted strategies to increase access to PMTCT services, there remain observable differences in the level of use of these services between and within

countries (4). These differences in the use of health care contribute to growing disparities in health outcomes, in this case HIV incidence rates among children under five. It is these health disparities that have now become central to health policy internationally (9). Increasing emphasis is therefore being placed on the causes of these disparities, termed inequalities, and how these causes can be overcome.

The major concern in this section is to provide an overview of types of health inequalities and to propose a definition for equity that realistically addresses concerns about the distribution and accessibility of health care services. In the following paragraphs the concept of equity is argued to be best presented as equal access for equal need as this principle is applicable to all types of health services and can be achieved realistically.

2.2.1 Health inequalities

Equity has been defined as the absence of disparities (unfair and unjust differences) between socially advantaged and disadvantaged individuals (10, 11).

While health is commonly argued to be a basic human right, one frequently observes considerable inequalities in the health of individuals within and between different societies, ethnic or race groups (12-14). Disparities in health are argued to result from differences in personal, socioeconomic and/or environmental contexts (10, 15). Socioeconomic and environmental attributes include employment status, educational attainment, environmental and occupational exposures and access to basic health promoting services and facilities such as safe drinking water, waste disposal and sanitation systems (15). In contrast, personal attributes include an individual's natural predisposition to certain health conditions due to gender, age or genetic makeup, but also include personal cultural practices affecting health and individual behavioural tendencies which impact health (10, 15). Clearly there is therefore a difference between personally-moulded and socially-constructed differences in health. Health disparities arising from socially constructed differences are considered unfair or unjust particularly if they can be removed in order to equalise opportunities for health (10, 11 and 15). Researchers often distinguish between health inequalities that are unfair and unjust from those that are 'fair' or inevitable (10, 11 and 15). It is noted that unfair and unjust inequalities can also be termed inequities whilst fair or inevitable inequalities are simply health inequalities.

2.2.1.1 Health inequities and health service inequities

While a focus on health inequities is important, responding to these adequately would require coordinated action from a number of sectors beyond the health care system. The focus in this paper however, is on health services.

Previously it was mentioned that differences in the level of use of health services between and within countries contributed to disparities in health outcomes. This points to a need to equate opportunities to utilise health care in order to achieve better health outcomes. Unfair inequalities in the distribution and organisation of health services can have detrimental effects on one's propensity to utilise health services. This can contribute to the surfacing of health inequities.

2.2.2 Principles of equity

Whilst there has been a call to achieve equity in health and health care, there has not been as much consensus as to what principle or definition of equity should be used in addressing this goal in order to better enable monitoring progress towards it. Several principles have in fact been debated in the literature, all in a bid to explain the fundamentals of equity (16-18). Three key principles are commonly discussed:

- Equal access to health care for those in equal need of health care
- Equal utilisation of health care by those in equal need of health care
- Equal health outcomes

Equal access for equal need suggests that the health care system should afford equal opportunities for achieving maximum health for all individuals with the same or equal need (16-18). For instance all children should have the same access to the same vaccines necessary to prevent ill health. This does not necessarily mean that utilisation will be equal as personal choice and preferences might lead to different levels of utilisation even if access is equal (18). Similarly, those with unequal need, for instance women and men, should have unequal access to healthcare in line with their differing health requirements (vertical equity).

The principle of equal utilisation for equal need on the other hand discounts the role of individual preferences for healthcare (16, 18). In this instance two hypertensive women are expected to use antihypertensive services and medication equally since they have the same 'need'. This principle however, tends to override acceptable reasons for unequal use of health care such as certain lifestyle preferences (perhaps influenced by cultural or religious beliefs),

behavioural tendencies or risk aversions that hinder use of health care (18). This principle can only apply for certain but not all health services and in particular, applies where externalities exist. For instance, where herd immunisation is necessary to prevent a potentially fatal disease such as poliomyelitis, personal preferences are overridden in order to improve future population health.

The last commonly discussed principle is that of equal health outcomes. In this regard all individuals are expected to attain the same health status (16, 18). Addressing equity in this manner would require that more resources are spent in ensuring all individuals have the same lifestyle and stringent measures are put in place to restrict personal choices for risky behaviour such as smoking or eating 'unhealthy' foods. While this approach would be highly effective in reaching the goal of equitable health, scarce resources at the national level and freedom of choice at the individual level hinder the probability of fulfilment of equal health outcomes. Instead it is more practical to equate opportunities to obtain health care for each individual (16, 18).

Therefore, this review is in agreement with Oliver and Mossialos (18) who contend that the best principle of equity in health care for health policy makers to pursue is that of equal access to health care for those in equal need of health care. In essence this principle means that in order to achieve equity, health systems need to distribute resources and processes in such a way as to equalise the opportunity to use health care for all individuals. Because access is often seen to differ according to socioeconomic status, this principle often includes a focus on equalising opportunities between socially advantaged and disadvantaged individuals.

2.3 THE CONCEPT OF ACCESS

Whilst the previous section defined equity as equal access for equal need, this section further discusses the concept of access itself. Although there is a fair body of literature on access, there is still debate as to what exactly access represents. The following section aims to introduce the fundamentals in defining access and presents an argument for the idea that access is a multifaceted concept which includes the relationships between dimensions of availability, affordability and acceptability of health services. Access is not merely a supply side issue i.e. a health delivery system issue, but integration between the individual or household (the demand side) and the health system (the supply side). It refers therefore to the degree of fit between health system supply and individual or household needs.

This section also introduces the reader to a conceptual framework that will be applied within this dissertation in order to evaluate access to PMTCT services. A conceptual framework or model provides a broad understanding of the phenomena of interest and allows for an understanding of how its individual components relate to each other (19 and 20). In this case the phenomenon under study is pregnant women's access to PMTCT services and thus a framework that provides a broad understanding of access is the subject of interest.

2.3.1 Access: multi-dimensional and interrelated

Colloquial definitions of access suggest the idea of 'a right to or a means of approaching, entering, communicating with, exiting and making use of a service or system' (21). This description of the term implies the existence of a multitude of pathways, channels and resources consumed or spent in order to make a system or service accessible to an individual. Similarly, early literature often conceived of access as the 'entry into the health system' (22). Entry into the health system however, requires the health system to exhibit certain characteristics and for the client to complement these characteristics and vice versa. These characteristics include availability, acceptability and affordability.

2.3.1.1 Availability, acceptability and affordability

Access is argued to be a multidimensional concept comprising three key dimensions of availability, affordability and acceptability, all of which are interrelated and at any level influenced by information and knowledge (23-27).

Researchers Bodenheimer (28) and Freeborn and Greenlick (29) defined access as the availability of a service in the right place at the right time. Their emphasis was on the physical presence of resources necessary to improve health for an individual or community. As can be expected much of access is indeed concerned with the availability of the necessary resources including personnel, infrastructure and medicines. This conception leads many attempts to increase access to any particular service. As identified in the literature, physical access constitutes a very important and necessary step allowing individuals to utilise health services (30). The proximity to a health facility is an example of physical availability that can pose a great barrier to using health services: studies have shown that people are unlikely to travel farther than 5km to preventive and curative care (31). Indeed the location and quantity of services are therefore important in improving access.

The quantity of resources is particularly important in poor developing countries which are ravaged by health-worker migration and drug supply shortages. In a study conducted in Uganda, researchers found that shortages of trained staff, lack of staff motivation, and a shortage of materials hindered access to HIV testing and other PMTCT services (32). Similar findings were observed in studies in South Africa where women did not receive adequate PMTCT services due to what the authors referred to as "health systems failure," including missed opportunities for HIV testing, receipt of the result, and access to nevirapine (33, 34). Other health systems failures reported were shortages of supplies and consent forms, lack of counsellor availability, and health staff offering incorrect information or education that was not well understood by the local population.

However, it is important to note that availability refers not only to the geographic location and quantity of services but also the range of services provided (27). A mere count of the facilities in an area is not sufficient to conclude that services are available: the services available must match the needs of the population. This is evidenced in empirical literature, for example in a study in Sri Lanka, geographic distribution of facilities was found to be adequate but availability of services for chronic diseases was poor (35). As such people still reported limited access to services because what they required was not made available to them. Regarding PMTCT, some of the studies have looked at the type of regimen used in PMTCT or the type of test used for HIV testing as this affects uptake of PMTCT. Offering the rapid HIV test to pregnant women has been found to improve the rate of receiving HIV test results given that this minimises the potential loss to follow-up of women who do not return for their test results when non-rapid testing is used (36).

Essentially, increasing the availability of resources will improve access to health services, but others have argued that this does not constitute the full definition of access (22-27). While services may have been made available in an area one may still be unable to access these services. Donabedien (22) identified what he termed 'socio-organizational and geographic attributes' of resources which have the potential to hinder or enable one to utilise health services. He argued that the mere existence of services did not constitute access but how acceptable they are to the individual using them impacted how accessible they were to him or her. These attributes may, for instance, be the presence only of a male provider for female services or race and language differences between a doctor and his patient which could pose a barrier to use or successful use of services.

Consequently, one can identify certain expectations from the health system of an individual and conversely expectations from the client of the health system. These expectations, particularly on the client's side arise from their own cultural standing (values and beliefs), attitudes or knowledge regarding the problem at hand (37 and 38). In more recent literature, this aspect of access, termed acceptability, has been defined as the social and cultural distance between health care systems and their users (39). Three elements of acceptability are described in the literature (39). The first is the fit between lay and professional beliefs which govern individual decision making in health seeking. A study in Kenya showcases this (40). The study investigated community preferences and characteristics versus supply-side characteristics. One of their key findings was that whilst insecticide treated nets (ITNs) for malaria were distributed free to all households there was a mismatch between the types of ITNs distributed and the community's preference. Lay beliefs were that the white colour and rectangular shape of the ITNs represented a burial shroud and a coffin respectively. As such they associated the ITNs with death and were not willing to use them. On the supply side, rectangular nets were thought to be easier to use as they fitted around a bed more easily than round nets.

The second element of acceptability is the way that health care organizational structures and arrangements frame patient responses to services. This also encompasses the quality of care received. Tianviwat et al (41) found that while child-dental care was available in mobile clinics, parents were willing to incur more costs to attend the regional hospital's dental care unit. The reason for this was the poor quality of services that they experienced with the mobile clinic relative to the hospital. In essence, without consideration of the quality of services, availability may only result in marginally increased access to services. This idea was resonated in Vietnam where researchers sought to establish the difficulties that women experienced in accessing PMTCT (42). Although PMTCT services were available and settings that offered PMTCT were well resourced, still, pregnant women experienced barriers in accessing the services. The researchers discovered that although PMTCT was available, HIV-infected women did not receive adequate care because of barriers to accessing those services which included the quality of care and poor testing and counselling services.

The third element is that of the nature of provider-patient engagement and dialogue. Somers (43) identified this as the influence of the doctor-patient relationship: how well the two parties interact affects how much the client is willing to utilise the services. It is also seen to include the degree of trust the patient has in the provider (44). A study by Matua (45) found

that pregnant women based their health seeking behaviour on previous experiences with the health system including negative attitudes from providers. Similarly, lack of trust in providers affected utilisation of TB control programmes in Vietnam (46).

Another dimension of access brought up in literature is affordability. The affordability of services has often been narrowly described as the cost of healthcare at the supply side or health delivery system and the income or ability to pay on the demand side or for the individual (47). In other words, the literature mainly considers the cost of receiving care that an individual incurs at the point of service use. This is also known as the user fees. Consequently, efforts to improve the affordability of services concentrate on user fees and it is normally assumed that low user fees should result in greater opportunities to utilise health care (48, 49). This is true in most cases. Teeraratkul and colleagues (50) reviewed PMTCT programs at two hospitals in Thailand between 1999 and 2001. During the first year of their national program, Thailand achieved nearly 70% PMTCT coverage. PMTCT services at two large hospitals with extensive maternity services offered routine HIV testing and counselling during antenatal care and labour for those who did not present sooner. Women from rural areas demonstrated higher access to antenatal care compared with women in urban areas (94% vs. 87%). The most frequently cited cause of not accessing antenatal care in this population was not having enough money to pay for services (60%).

There are however, many other costs that an individual incurs when attempting to access health care which can deter use of health services. Until recently very little effort had been made to broaden the concept of affordability to include these costs. Researchers have termed these 'opportunity costs' and 'indirect costs' that the individual incurs upon using the health services (27). Opportunity costs refer to the value of the best forgone alternative use of a given amount of resources (51). The opportunity cost in seeking health care can be described as the income lost due to time spent away from the individual's income-generating project while seeking health care (27). This type of cost is common where individuals are self-employed or where one does not have the ability to obtain sick-leave from work. Opportunity costs arising from illness and health seeking thus have an impact on the family's income generating capacity and ultimately on the family's disposable income. This sometimes results in delays in health seeking in order to meet other monetary requirements for the family such as food and education (52).

Indirect costs are those costs incurred in the process of seeking health care. They include transport costs to and from the health facility, cost of food consumed during the time waiting to be attended at the facility, cost of hired child-minders who take care of the children at home while the parent or guardian seeks health care, and any other costs that the individual incurs in the process of obtaining health care.

2.3.1.2 Access dimensions are interrelated

Penchansky (47) made an important observation that the dimensions of access cannot be easily separated. For example, user fees are commonly associated with the quality of care received, the availability of services and the range of services provided (27). It is thus impossible to separate affordability from quality and availability of services. The issue of user fees and their removal or reduction is thus a subject of debate in many low-income countries (53). Although deemed necessary in order to improve the quality of care, user fees have often been blamed for increasing inequities in the health system and also for worsening poverty (54, 55).

Empirical literature has shown how the link between user fees and quality, availability and affordability works. A comparison of countries that introduced the Bamako Initiative is an example. The Bamako Initiative sought, among other things, to improve essential drug distribution and introduce user fees in a bid to increase the availability of quality health care (56). In Cameroon, it was discovered that facilities that implemented the initiative had increasing numbers of people utilising the services (57). In that context, travel and time costs incurred in seeking alternative sources of care that was free at the point of use proved to be higher than the user fees applied at closer health facilities which had improved quality of services. Thus people were more willing to pay for quality drugs rather than pay at alternative lower quality sources of care. In essence, introducing user fees led to a sustained increased quality of health care, increased availability of medication and increased affordability in the sense of indirect and opportunity costs such as time and travel costs. In comparison, in Zambia, introduction of user fees led to decreased utilisation of services and reduced access to health care (57). Primarily the reason for this was the absence of an improvement in the quality of care: the resources generated from user fees were not used to improve quality of services. As such there was a decrease in affordability which drove the cycle of decreasing utilisation and decreased revenue generation subsequently resulting in a decline in the quality of services rendered.

Still on the subject of interrelatedness, another study showed the impact that increasing availability of facilities had on other dimensions of access. Gottlieb et al (58) sought to evaluate the impact of additional or new maternal and child health stations on access to antenatal care by women. Although their main focus was on availability, they addressed questions of financial access, socio-cultural barriers and health system characteristics by including questions on these in the interviews they conducted. They found that establishment of new stations improved physical access to ANC and secondarily diminished other financial barriers such as transport costs. Additionally, socio-cultural barriers which arose from needing permission, company and support in order to access distant services, were reduced due to closer proximity of facilities thus enhancing women's options for independent healthcare-seeking. However, increased numbers of facilities diminished the system's capacity to contain the workload as there were not enough staff to go round. As such there were limited opening hours, staff shortages and communication problems which hampered ANC delivery at the new MCH stations.

2.3.2 Access: degree of fit between supply side and demand side

One finds that the general theme in defining access is that it can be equated to characteristics of the population - the demand-side, and characteristics of the health system – the supply-side. Most literature refers to issues pertaining to both demand and supply side which ultimately affect access to the healthcare system (23-27). However, some writers have distinguished the two saying it is mainly the supply side that has an effect on access (59). Their opinion is that access is a 'supply-side issue and indicates the level of service which the health care system offers the individual'. This opinion does not consider demand-side issues that can hinder or enable one to access health care. Demand-side predisposing factors such as age, gender, ethnicity or religion can sometimes affect the ability of an individual to access healthcare. Additionally, one can have enabling factors such as high income or insurance coverage that enable them to access health care. Furthermore, one's attitudes towards and beliefs about health care and services can affect ability to access health care. Because of this, others have argued that access is not merely a supply-side concept (23, 27).

Whilst there are supply-side and demand-side characteristics that influence access, there also is an important link between the two that ultimately determines access. The Aday and Andersen framework (23) does not adequately point out these important links or interrelationships that exist between the individual and the health system. This only becomes

more apparent in later models such as the one by Penchansky (47). Penchansky's model was related to the enabling variables in Aday and Andersen's model which constituted the means that an individual had available to them in order to use services.

Penchansky developed the model based on 5 dimensions of access, that is, availability, accessibility, accommodation, acceptability and affordability. His model suggested that 'a degree of fit between the health system and the individuals' could be measured across the five dimensions of access specifying that the health system and the individual both had enabling characteristics within the five dimensions which could result in the individual's access to the health system.

His argument then was that there existed some specific areas of fit between the patient and the health system. For instance, he described availability as 'the relationship of the volume and type of existing services (and resources) to the clients' volume and types of needs' and affordability as 'the relationship of prices of services and providers' insurance or deposit requirements to the clients' income, ability to pay, and existing health insurance'. This means that each individual experiences healthcare differently due to their own socio-economic standing and personal beliefs, values and attitudes.

To further explore the relationship between demand-side and supply-side a systematic literature review was conducted by Ensor and Cooper (60). The purpose of the review was to unpack the demand side characteristics that affected access and how these could be overcome through adaptation on the supply side or through targeting the underlying causes. The researchers found that frequently identified demand side determinants included the distance the individual lived from the facility, their education level, the opportunity cost to accessing health care and cultural and social barriers. The study showed that these demand-side barriers were at least as important in determining access to services as the services delivered by health care providers. In order to improve access to health services, most of the studies reviewed proposed that the health delivery system provide services in such a way as to accommodate the concerns of individuals. This relates to the issue of the degree of fit between the health system and the individual who uses the system. The study showed the ways in which demand-side barriers could be overcome by improvement of the supply-side characteristics in order to fit the individual's needs, yet sometimes it is the demand side characteristics that need to be addressed in order to adequately fit into the structure of the health delivery system.

In conclusion, it is crucial to note that a degree of fit must exist between "characteristics of the provider and health services and that of the clients and expectations of clients and health providers" (25).

2.4 A CONCEPTUAL FRAMEWORK FOR ACCESS

Some of the above issues have been addressed in the formulation of an access framework by McIntyre et al (27). Similar to other frameworks in the literature, it conceives of access as 'the empowerment of an individual to use health care and reflects an individual's capacity to benefit from services given the individual's circumstances and experiences in relation to the health care system'. Thus their argument is that health systems have the goal of ensuring all individuals are equally empowered, in other words, have equal opportunities to use health services rather than that access is equal to utilisation of health services. This is an advantage where health policy is concerned as it moves away from individual preferences in utilising a service and rather investigates the cause for the different patterns in ability to use health services.

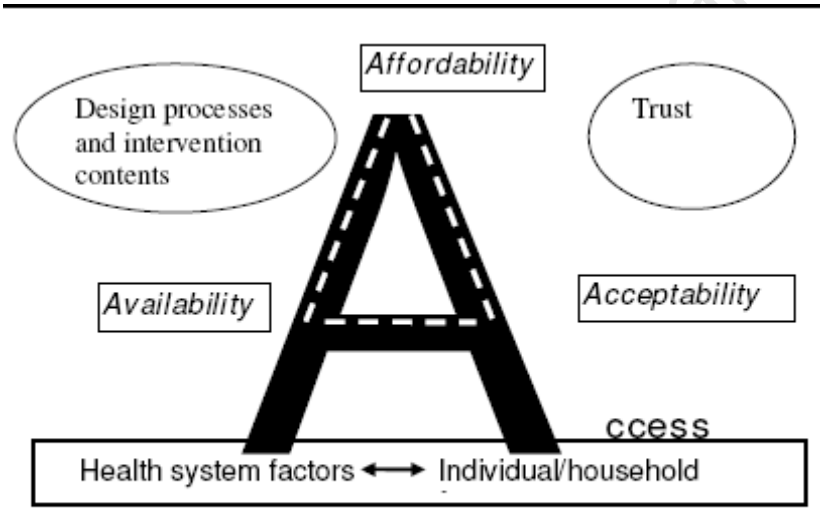

Figure 3 The 'A' framework (Thiede et al, 2007)

Instead of five dimensions as mentioned by Penchansky, the 'A' framework as seen in figure 3, is comprised of 3 comprehensive dimensions where the availability dimension is conceptualised as the 'the right health services being available in the right place at the right time'. Hence this definition absorbs Penchansky's dimensions of accommodation, accessibility and availability. The model also adopts Penchansky's idea of an existence of a

degree of fit between the client and the health system such that a relationship between the two is present in each dimension.

2.4.1 Availability

The A-framework proposes availability to be all of 4 aspects:

- The relationship between the location of health services and the location of the population at risk and their access to transport
- The capacity and willingness of providers to serve the population according to the type and severity of their condition
- The degree fit between operating hours of facilities (design processes) and the times that clients need the services to be provided
- The relationship between the type, range, quantity, quality of services (intervention contents) and the nature of health needs of the population.

This draws focus away from only the physical presence of services as most literature tends to imply and broadens availability to be more comprehensive of client needs and health system ability to provide for those needs.

2.4.2 Affordability

The framework considers the user fees of services and the direct and indirect costs incurred by the individual through attaining health care. This reflects an argument that the cost to an individual in attaining health care is not merely the fees paid at the point of service use but also the cost of travelling to the facility, food consumed while awaiting attention, cost of child minders left caring for children at home, cost of lost income or productivity while seeking health care and many other costs incurred by the client.

The term affordability also implies ability to pay. As such the concern in this dimension is also the ability for the client to incur the full cost of health care. One can thus expect that this ability is dependent on the income of the client, the disposable income after incurring mandatory daily living expenses, the possession of health insurance covering illness occurrence, the existence (and the awareness) of an exemption facility, the availability of a flexible payment mechanism (the design process) and the ability of the client to incur indirect costs through substitution of labour during illness or acquisition of sick leave benefits to protect income while ill.

It is thus concluded that affordability is the degree of fit between the full costs to the client and the client's ability to pay 'in the context of the household budget and other demands on that budget' (27).

2.4.3 Acceptability

Here the framework relates to Donabedien's concern for the socio-organizational attributes of the system that hinder or enable one to gain 'entry into the health system'. However, it does not only look at the supply side attributes but considers the degree of fit between the provider and patient attitudes towards and expectations of each other as well as trust in each other. For instance, adolescent pregnancies have in the past attracted attention because of the friction between providers and clients (61, 62). In this case, the provider judges the client according to her age and subsequently develops a negative attitude towards the client and becomes less accommodating to the individual. On the other hand, the client expects the provider to treat her respectfully and undertake a thorough examination of her pregnancy and to explain fully the stages of her pregnancy. This lack of 'fit' affects the client's ability to receive care, let alone acceptable care and hence the young woman may not access care.

2.4.4 The role of information

Information in the 'A' framework cuts across all dimensions of access informing needs-based resource allocation by planners, informing communities about the availability of services, informing individuals about exemptions and acceptable payment mechanism and informing providers about cultural beliefs and values of communities which may affect acceptability patterns. Researchers such as Goddard and Smith (59) and Andersen and Aday (23) have previously voiced the importance of information and education in their work on access.

2.4.5 Interrelationship between dimensions

Finally the framework proposes the presence of interrelationships that exist between the different dimensions. The model by Andersen and Aday recognised links between the 5 components of access (health policy, characteristics of health delivery system and those of the population at risk, utilisation, and satisfaction) but did not show the interconnected nature of the actual dimensions of access. The A-framework enables one to recognise that one aspect of access cannot be addressed without possibly affecting the other. Where availability is increased affordability may be decreased and where affordability is decreased acceptability may decrease. Therefore access is altogether the inter-linking between these key dimensions.

2.4.6 Limitation of the 'A' framework

Although the 'A' framework tries to capture the broad picture of factors that influence access, the role of government and policy design and processes is not considered thoroughly as a major determinant of access. What degree of access is reached along the three dimensions depends largely, as some researchers have noted, on the interplay between the health care services and the broader policies, institutions, organizations, and processes (PIOP) that govern the services (64, 65). These may also be referred to as policy-level barriers. For instance policies restricting who conducts an HIV test, where drugs are dispensed from (whether centralised or decentralised), or which drug regimen is first-line, inadvertently affect access. These barriers are neither supply nor demand-side barriers but immensely contribute to failure to provide and abtain the necessary health care. In the face of political or economic instability, the policy-level barriers may be exarcerbated due to decreased capacity to instigate change in the PIOPs. Therefore in investigating access, it would be worthwhile to determine what PIOPs govern health services as this determines how services are provided.

2.5 APPLYING THE 'A' FRAMEWORK

In coming up with policy relevant solutions, researchers often seek to find out the underlying issues that influence factors associated with access. However, operationalizing the conceptual framework for access by beginning with considering all the underlying issues that could impact access may prove a difficult and potentially overwhelming task (27). Hence researchers employ the more systematic approach of starting with the three dimensions as entry points into exploring access.

The studies reviewed showed this common starting point by breaking down access into its three main dimensions of availability, affordability and acceptability. Following this they then identified the factors influencing access in each dimension and asked questions which investigated the possibility of constraints to access in each factor. An example of this is a study by Akweongo (66), which investigated access to malaria treatment in Ghana. The researcher collected information through a household survey on factors that determined access such as cost of transport, distance to facility, and variables referring to the cultural and religious beliefs of households. Upon analysing the data, she then identified access factors relevant for each dimension by conducting regression analysis for each dimension of access separately. For instance to identify factors relevant for availability, variables such as the physical distance to the facility, waiting time and opening hours were included as explanatory

variables in the regression and the statistically significant variables then retained for further analysis. Using principal components analysis, factor scores were generated for these variables in order to actually 'measure' the respective dimensions of access.

Other studies have used a less quantitative method and instead sought to describe access factors. The study by Chuma et al (40) is an example of this. They conducted a cross-sectional survey and focus group discussions to elicit qualitative descriptions of barriers to access. Interviews with individuals and health providers elicited both the constrained factors in each dimension of access and the underlying issues influencing each factor.

Goudge et al (67) sought to investigate the factors enabling or constraining access in each dimension by conducting interviews with chronically ill patients in order to document the individual's socio-economic status including information on their culture, income and education, which were seen as variables that could influence one's ability to access health care. In addition the interviews extracted the individual's perspectives of health care and also exposed the role that other household members and the broader social network played in influencing health seeking behaviour. They then made use of patient diaries and illness narratives to capture descriptive textual data about the household's interaction with the health system. Data included the experiences people had relating to the affordability, availability and acceptability of health care and this allowed the researchers to identify and explain the utilization patterns exhibited by patients. All this information that they collected included factors influencing each dimension of access and underlying issues that could influence these factors. Therefore, through application of the 'A'-frame, the study identified the key areas which needed to be addressed by health policy in order to improve access for the chronically ill.

In conclusion, the studies showed that it was possible to measure or describe access using a similar conceptual framework of access by carefully identifying factors of interest for a particular intervention that contributed to the different dimensions of access. They also showed how one could investigate the relationship between the health system and the individuals who used the health system and how the framework could be used in identifying underlying causes for constraints to access and thus inform policy. Thus with this knowledge in mind it is possible then to assess the barriers that pregnant women face in accessing PMTCT services in Zimbabwe utilising the A-framework. The study's objectives are to assess the knowledge about PMTCT and assess the availability, affordability and the

acceptability of PMTCT services. The study furthermore intends to determine the factors associated with each of the dimensions of access. Guided by the concepts and conceptual framework defining access in this literature review, we can conclude that availability entails an investigation into the regimens available, the availability of HIV test kits and HIV test results, the suitability of operating hours of facilities and the availability of transport and the distance to the facilities. Similarly, assessing the affordability of services will entail investigation of the prices of services and the payment methods accepted, while assessing acceptability of services entails investigating the relationship between staff and patients and assessing knowledge entails investigating knowledge about PMTCT. Furthermore to determine factors associated with each dimension of access requires investigating the participants' demographic, socio-economic and geographical circumstances and thus identifying possible relationships between their characteristics and the constraints to access or knowledge that they exhibit. This will ultimately identify whether any inequities exist in access to PMTCT.

2.6 Summary

This literature review discussed issues pertaining to equity and access to health care and identified the conceptual framework for studying access. It also reviewed empirical literature that applied the conceptual framework of access in studying barriers to accessing health services.

Improving access to core programmes such as PMTCT could have a dramatic impact on the reduction of HIV-specific child mortality. Yet many interrelated factors are at play in determining access to services. Subsequently, it is important to consider all dimensions of access in order to improve an individual's propensity to utilise health services.

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CHAPTER 3

MANUSCRIPT OF AN ARTICLE

3.1 ABSTRACT

BACKGROUND: Although Zimbabwe has invested in nationwide scale-up of prevention of mother to child transmission (PMTCT) services, high HIV-specific under-five mortality rates continue to be observed. This study aimed to document the potential reasons for low PMTCT uptake by examining factors constraining access to PMTCT services.

METHODS: A cross-sectional facility-based survey based on structured face-to-face interviews (n=70) was combined with qualitative research that included two focus group discussions with pregnant women and 5 in-depth interviews with providers at antenatal care (ANC) clinics in Marondera.

RESULTS: Financial constraints played a major role in access to care. Sixty-seven percent of the women reported financial constraints barred them from utilising ANC services and facility-based delivery which are the entry points to accessing PMTCT. Results showed a statistically significant positive correlation between wealth index and ability to pay for services ($p<0.001$), thus implying access to services is according to ability to pay, rather than need for services. Knowledge about PMTCT also played a role in women's ability to access and exercise PMTCT. Lack of knowledge was related to poor communication and inadequate information from health providers. Low quality of care including poor provider-patient interactions and generally unclean facilities were mentioned as deterrents to the use of services in some facilities. In addition, physical access to health facilities was limited in rural areas due to long distances and lack of transport.

CONCLUSIONS: Scaling up PMTCT services through integration into ANC can only be effective in achieving universal access if barriers faced by prospective clients are considered. Results suggest that key improvements would include examining alternative financing mechanisms that do not deter patients such as pre-payment mechanisms. In addition, while it is important to improve the state of health facilities, it is also necessary to find ways in which providers can engage with women in a way that improves the acceptability of services and improves their knowledge about PMTCT.

3.2 BACKGROUND

Vertical transmission of HIV is directly responsible for 90% of childhood HIV infection in Sub-Saharan Africa (1). Without any intervention there is a 20-45% chance of this transmission occurring (2). However, by implementing the prevention of mother to child transmission (PMTCT) strategies which include antiretroviral (ARV) prophylaxis, ensuring safe delivery and safe infant feeding practices, the risk of transmission can be reduced to as little as 2% (3).

The possibility of such a great risk reduction is the drive behind much political and scientific advocacy towards implementing PMTCT strategies (4). However, a major challenge faced by developing countries is increasing access to PMTCT (5). United Nations member states set targets in 2001 in an agreement called the UNGASS declaration to ensure that by 2010, 80% of women accessing antenatal care (ANC) would have access to information, counselling and other HIV prevention services available to them (6). This has therefore seen the PMTCT programme expanded in most resource-poor settings through integration into existing ANC services (7).

Whilst most developing countries have implemented PMTCT (8), HIV specific child mortality rates continue to be high relative to targets set in millennium development goal 4 (MDG 4) of reducing child mortality (9). In Zimbabwe, the last recorded rate showed that 40% of deaths in children under the age of 5 were directly as a result of HIV/AIDS (10). Although PMTCT has been scaled-up, at least 60% of the women in need of PMTCT are still not being reached (11). It is not evident whether women have adequate access to the PMTCT services in the first place and if so, if this access is equitable, that is, that there is no differential access due to lack of income, differences in ethnicity, sex, age, religion or any other factors not directly related to the need for PMTCT (12). This study therefore aimed to identify potential barriers to access that could impact utilisation of PMTCT services.

Attempts to increase access to PMTCT in Zimbabwe have seen the introduction of free HIV counselling and testing in clinics; free ARV prophylaxis for HIV positive pregnant women (single dose nevirapine for mother during labour, and for baby at birth); and counselling on breastfeeding options (13). At the time of the study, the guidelines on HIV counselling and testing had shifted away from the voluntary ‘opt-in’ approach to the ‘opt-out’ approach through the provider initiated counselling and testing (PITCT). This method was

adopted from other countries such as Botswana where the opt-out approach had improved the numbers of women testing for HIV (14).

While current measures should improve access to PMTCT services, there remains a potential for other issues to impact access. Studies have shown that individual, health system and external factors can affect access to health services (15-20). These include individual perceptions towards health and health services, individual ability to afford health care and the availability of health services and resources for health. Access has thus been described as a broad concept which can be measured using 3 dimensions: affordability (financial access), availability (physical access) and acceptability (social and cultural access) (20).

Zimbabwe has experienced changes across some of these dimensions. Structural adjustment programs introduced in the early nineties to reduce government expenditure saw the introduction of user fees for health services (21). Declining real expenditure in health care led to the deterioration of health services, poor maintenance of facilities and high staff attrition. By May 1996 antenatal fees in the public sector were pegged at between Z$60 and Z$250 (equivalent to US$6 to US$25) depending on the level of the health facility (22). Hyperinflation, sparked by increased money supply in the early 2000s, drove prices of commodities and services beyond the reach of many (23). By 2008, unofficial rates were such that the private sector, the only services available at that time, charged US$20 for consultations whilst delivery fees were as high as US$1000 (24, 25). Unfortunately much of these health care payments were direct out of pocket payments with a minority (10%) of the population benefitting from medical aid obtainable through employment in the formal sector (22). Ultimately, many aspects of access were compromised due to policies and contextual factors affecting the health system and individuals. It is obvious therefore, that a lot of adjustments need to be made in order to improve access to services.

This study assesses pregnant women's access to PMTCT services by looking at the availability, affordability and acceptability of PMTCT services. It adopts an analytical framework that explores demand, supply and policy level barriers across the 3 interrelated dimensions of access (20). The framework also conceives of information as an element cutting across all 3 dimensions which is a pre-requisite for promoting good interactions between the health system and the individuals (17 and 20). Information also empowers individuals to make fully informed decisions about health care (17 and 20). Finally, the framework aids to demonstrate how factors related to the different dimensions interact to

influence utilisation of PMTCT services, an understanding of which is essential for generating concrete policy recommendations.

3.3 METHODS

3.3.1 Study site and population

The study was conducted from January to April 2010 in the Marondera district of the Mashonaland East province of Zimbabwe. The district has a population of approximately 154 677 (26) and was purposively selected to represent the variable socio-economic and socio-cultural differences that exist throughout the country. It is a multi-cultural area that includes several different tribal groups (27). Rural inhabitants are predominantly involved in small scale trading and indigenous farming activities while urban dwellers are involved in commercial farming.

Marondera is also characterised by high HIV-prevalence among ANC attendees with an estimated 30% testing positive for HIV (28). This makes PMTCT need relatively high in the district and hence provides a significant base to conduct the study.

Since PMTCT is delivered through ANC services in Zimbabwe the study was conducted at public health facilities offering regular ANC services in the district. There are in total 3 hospitals, 7 clinics, and 4 rural health centres in Marondera (26). The facilities chosen for the study were first divided into rural and urban clinics to represent the different socio-economic groups and different health care access realities in the district. Two clinics from each group were then randomly selected. A hospital was included as the fifth facility in the analysis as women were referred there from rural health centres and clinics.

Since the main aim of the study was to provide an overview of the factors facilitating or hampering access to PMTCT, the intended users of the PMTCT programme, pregnant women, were selected as possible participants. Women under the age of 18 were excluded as they were not legally capable of consenting to participate in the study without parental guidance. Due to low turnout of pregnant women at facilities, all pregnant women attending ANC were approached to participate in the study. Seventy-two women were approached. Two women were not willing to consent and were therefore excluded from the study.

3.3.2 Data collection

A cross-sectional survey drawing on both quantitative and qualitative data was conducted within public health care facilities in the Marondera district. Structured questionnaires were used to collect quantitative data from pregnant women and these were administered by trained interviewers in the style of a face-to-face interview. This method was adopted to afford women an opportunity to ask for clarification rather than leaving questions unanswered and also to avoid low response rates associated with self administered and return-mail survey questionnaires (29). The questionnaire was developed and piloted on 15 pregnant women in Harare, Zimbabwe. The original questionnaire was then reviewed and modified based on the findings from the pilot study. The questionnaire was translated into Shona (the main local language in Marondera), and then back translated into English to ensure fidelity of translation.

Three trained researchers conducted the interviews for an average of 30 minutes per woman. Survey questions were grouped into 4 categories: socio-economic and demographic characteristics of the respondent including age, occupation, education and religion; knowledge about PMTCT including stages at which HIV can be transmitted to a child and methods of preventing this transmission; attitudes towards and the acceptability of PMTCT services including women's acceptance of the way in which PMTCT is delivered; and factors associated with the availability and affordability of PMTCT services.

Focus group discussions (FGDs) with women and semi-structured interviews with health care providers were also conducted to obtain additional information not identified in the quantitative survey. Two FGDs were conducted, one in the rural and the other in the urban area both comprising pregnant women who had attended ANC and were notified by nurses about the potential to participate in the FGD. The urban FGD was attended by 8 participants, while the rural FGD comprised 7 participants. Topics in the FGDs included key challenges faced in accessing PMTCT and knowledge about PMTCT. The FGDs were tape recorded and notes were taken during the discussion in order to complement the recorded information. The recorded material was then transcribed.

Semi-structured interviews were conducted with health providers such as nurses in charge of clinics, HIV/AIDS counsellors and those responsible for maternal and child health, at the 5 participating health facilities. Key topics in the interviews included the guidelines regarding PMTCT, the challenges faced in providing PMTCT services and the challenges perceived to

be faced by women in accessing PMTCT services. These interviews were also tape-recorded and transcribed.

3.3.3 Data analysis

Coded data from the quantitative survey questionnaires was entered and cleaned using the Epi Info program immediately after completing the interviews. Both descriptive and analytic statistics were obtained from these data through use of the statistical software STATA© (Version 10). Analysis included univariate and multivariate regressions which were conducted to identify the relationships that existed between some variables and access to health services. The covariates used in the analyses were selected based on the conceptual framework for access by McIntyre et al (20).

To assess affordability of services, an analysis on the existence and/or extent of catastrophic health payments was conducted. If the health care expenses are large relative to the resources available to the household, this disruption to living standards is considered catastrophic (30). The idea is that spending a large fraction of the household budget on health care must be at the expense of the consumption of other goods and services. Whilst longitudinal data is normally used to estimate the extent to which living standards are seriously disrupted by the purchase of medical care, this was not possible to assess in the given cross-sectional study. A ratio of health payments-to-income was instead calculated in which payments were considered catastrophic if they exceeded some fraction of the household income within a certain period (the full gestational period in this case) (31). Generally 5% to 10% of income is considered to be mild catastrophic expenditure whilst 15% to 40% are considered moderate to high.

An index of socio-economic status (SES) was constructed through the Principal Components Analysis (PCA) technique using ownership of household assets (32). To avoid clumping and truncation (wereby households are grouped together in a small number of distinct clusters (clumping) or an even distribution of SES is spread over a narrow range making differentiating between socio-economic groups difficult (truncation)), several variables were used including housing characteristics such as roof material and wall material, access to utilities and infrastructure such as source of drinking water, energy and sanitation facilities, and durable asset ownership such as ownership of a car, truck or bicycle (32). Indices were constructed separately for rural and urban areas to avoid misrepresentation of wealth. For instance, ownership of a bicycle, livestock and a well in rural areas indicates wealth, yet the

same assets do not have value in urban areas. Therefore to avoid making all rural dwellers appear less wealthy than urban dwellers, the indices were constructed separately.

Knowledge about PMTCT was assessed through a short test included in the questionnaire. Where women answered the question correctly they were given one point. Where they answered incorrectly or were not sure they received no points. The result was then converted into a percentage for each participant.

Qualitative analysis of transcribed FGD and provider interviews was conducted simultaneously by a team of 3 researchers. Each researcher independently read the written comments and transcribed data and grouped them into themes in a technique called immersion/crystallization which forms part of the broader grounded theory approach. It is defined as a process whereby researchers immerse themselves in the data they've collected by examining a portion of the data in detail, then temporarily suspending the process of examining in order to reflect on the analysis experience and attempt to identify themes noticed during the immersion process (33). The temporary suspension phase is followed by a return to the data, where the reflection process is fed back to the next immersion phase. These dual processes continue until all the data have been examined and patterns and claims emerge from the data that are meaningful and can be well articulated and substantiated (33). The team then met every 3 days to agree upon a common cataloguing of themes. Multiple reviews were conducted until saturation was reached and the key themes were extracted.

3.3.4 Ethical considerations

Prior to the research being conducted, ethical approval was obtained from the University of Cape Town (UCT) Research Ethics Committee in South Africa and the Medical Research Council of Zimbabwe (MRCZ). Written informed consent was obtained from all participants after explaining the purpose and objectives of the study. The interviews were conducted privately and anonymously. After each interview researchers provided the participants with more information about PMTCT and access to services in order to clarify misconceptions and make women aware of the accessibility of services.

3.4 RESULTS

3.4.1 Demographic characteristics

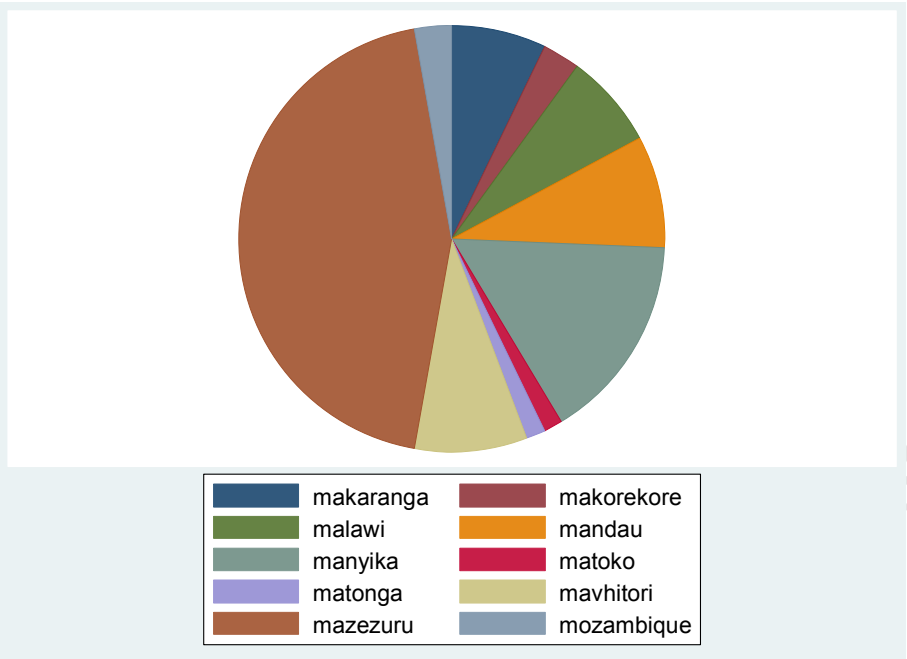

Figure 4 Tribal origin of respondents

A total of 70 questionnaires were successfully completed. The women were aged between 18 and 44 years of age with a mean of 25.6years. Fifty-two percent of the women were from urban areas while the remaining 48% were from rural areas. Altogether, 8 tribes were represented in the study with the majority being Mazezuru, while other women were of Malawi descent and Mozambique descent (figure 4).

As shown in figure 5, the majority of women were of the Christian religion with a minority Muslim and non-religious group. Most of the Christians were from the Apostolic sect, known to be a faith healing Christian religion.

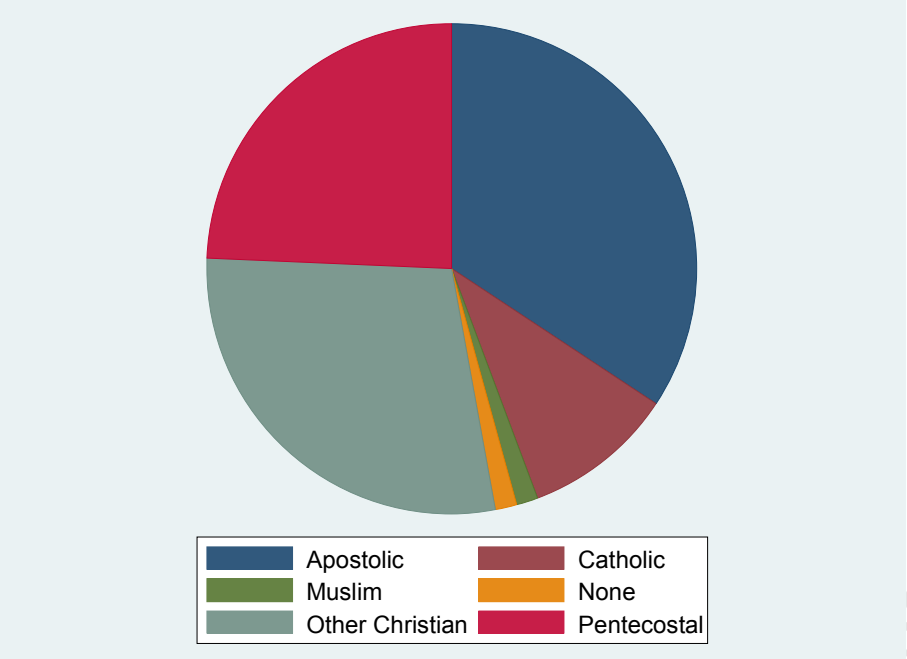

Figure 5 Religion of respondent

Table 4 represents the socio-economic status of the respondents.

Table 4 Socio-economic variables

Variable	Category	Number	% of sample
Marital status	Married	64	91.4
	Cohabiting	4	5.7
	Single	2	2.9
Household size	2-3	30	42.9
	4-5	28	40.0
	6-7	8	11.4
	8-9	4	5.7
Occupation	Informal (farmer, trader)	9	12.9
	Formal sector	6	8.6
	Student	4	5.7
	Unemployed	51	72.9
Level of education	None	0	0.0
	Primary	7	10.0
	Secondary	63	90.0
	Tertiary	0	0.0
Household head employment status	Employed	65	92.9
	Unemployed	5	7.1
Ownership of medical aid	Yes	14	20.0
	No	56	80.0

The majority of respondents had achieved secondary education as their highest level of education but 72.9% of the women were unemployed. In contrast, 92.9% of household heads were employed.

3.4.2 Affordability and availability

3.4.2.1 Affordability

Table 5 shows the results of the assessment of women's financial access to health care.

Table 5 Financial access to health services

Variable	Yes %
Do you have to pay for health services during your pregnancy?	97.1
Do you find that paying for health care is difficult?	60.3
Is the total cost of seeking treatment too high?	67.6
Is the cost of transport to the health facility too high?	28.9
Did you have to borrow any money during your pregnancy in order to pay for health care?	18.6
Did you have to sell any assets during your pregnancy in order to pay for health care?	14.3
If you have medical aid, can you use your medical aid to pay for health services?	3.7
Do you have access to any exemptions?	4.29

In total 60.3% of the women said that health service charges were a burden. When considering the cost of seeking healthcare, including transport, purchase of medicine, purchase of food during the time spent at the facilities and payments to child minders, among others, the proportion of those saying payments were difficult was 67.6%.

FGD participants expressed similar sentiments. Although PMTCT services were offered free of charge women still found it difficult to benefit from them because of the cost of ANC and delivery. Furthermore, the referral system made women incur even more expenses, *'First we pay at the clinic $80 then later...we are told to book with the hospital. Here, they don't consider that we have paid before. We have to pay another $50 here to book (for) maternity and then $5 each time we come for ANC'.*

Up to 96.3% of the women with medical insurance could not use it to pay for health care because facilities mainly accepted cash as the means of payment. Consequently the majority of payments were out of pocket (OOP). Figure 6 shows the percentage of total expenditure

spent on out of pocket payments for health care according to wealth (OOP variables were converted to a monthly figure by spreading the cost of delivery and ANC visits over the full gestation period).

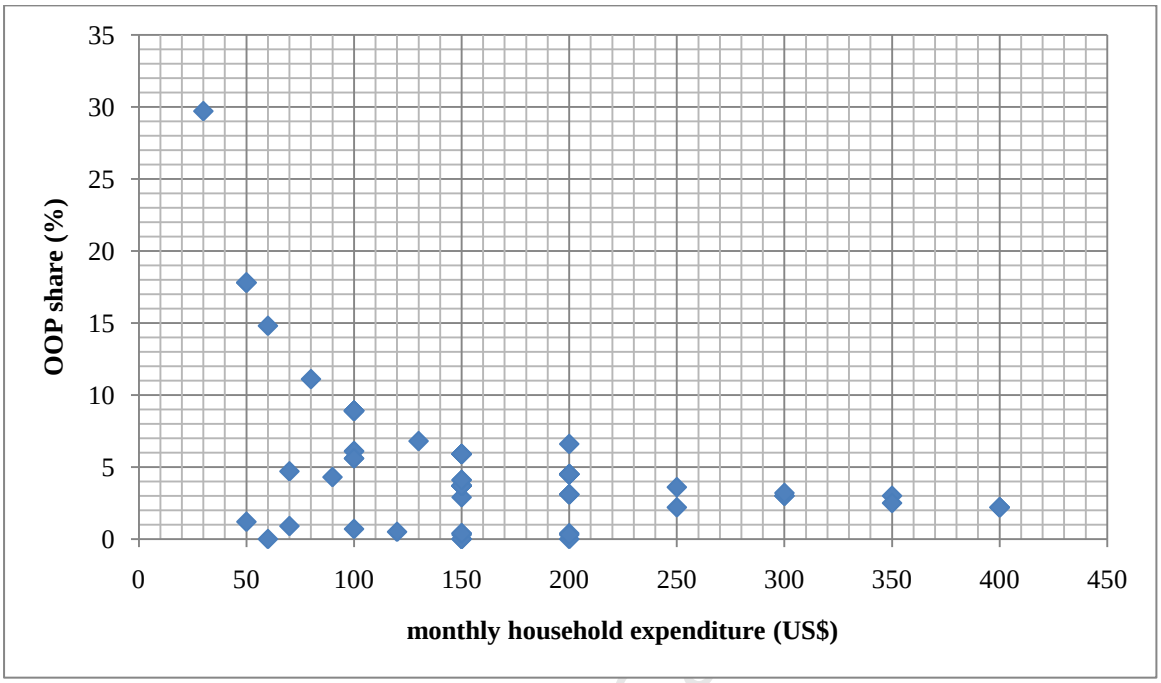

Figure 6 Out of pocket payment share of total monthly expenditure

Results show that the share of OOP expenditure in relation to monthly household expenditure is generally higher for poorer households than for richer households, suggesting a regressive nature in OOP payments.

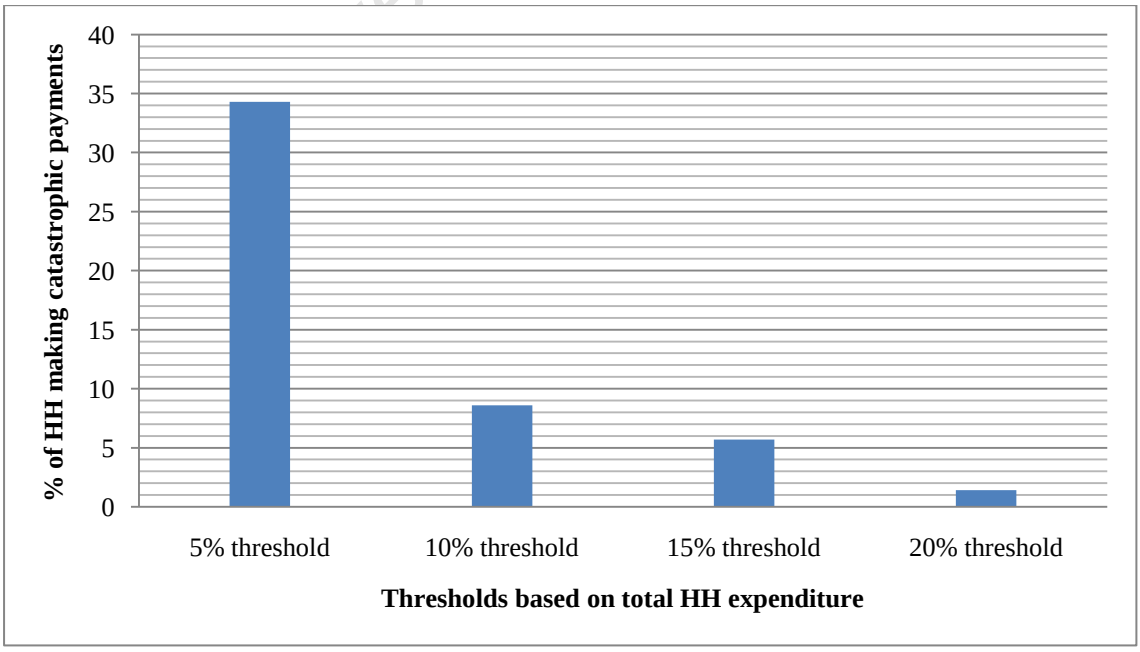

Figure 7 Catastrophic household expenditure

Figure 7 shows that over 34% of households are making OOP payments for ANC and delivery that exceed 5% of their total household expenditure, while 8.5% exceed the 10% threshold.

Table 6 Multivariate analysis of factors affecting affordability: logit regression model

		Cost of seeking treatment is a burden vs. not a burden [b]	
Variable	Category	β	p-value
Wealth index		-3.603	0.000*
Medical aid	Yes No[b]	.001	0.92
Monthly expenditure		-.123	0.31
Marital status	Married Co-habiting Single [b]	-.224 -.671	0.09* 0.13
Highest level of education	Secondary Primary [b]	-.187	0.96
Household size		.748	0.08*
Occupation	Student Informal sector Formal sector Unemployed [b]	.003 -1.372 -.665	0.28 0.14 0.35
Household-head is employed	Yes No[b]	-.544	0.59

β regression coefficient; [b] base category; *statistically significant at 10% level

A multivariate logit regression of factors affecting affordability showed that only the wealth index, marital status and household size determined whether women reported that the cost of seeking treatment was a burden.

Table 6 shows that as wealth index increased women were less likely to report that cost of seeking treatment was a burden. Women who were married were also less likely to report that the cost of seeking treatment was a burden as opposed to unmarried women. Finally as the household size increased, women were more likely to report that the cost of seeking treatment was a burden. The employment status of the woman or the household head had no effect on the woman's ability to afford services. Possession of medical aid also had no effect on the woman's ability to pay for services.

3.4.2.2 Availability

In terms of availability, the most frequently cited problem was the opening times of the facility and secondly the availability of transport as shown in table 7.

Table 7 Reasons for failing to access healthcare when in need of it

VARIABLE	Yes %
Opening times are inconvenient	34.3
Transport is a problem	27.1
Absence of drugs/ resources	25.7
Distance too long	22.9
Waiting time too long	22.8
Absence of health provider	18.6

The absence of resources such as medicines or HIV test kits was another problem women encountered. FGD participants reported that frequent stock-out of the rapid result test kits hindered those wanting to be tested for HIV from being tested. Women would be told to come back for the test another day or be referred to another facility.

Almost a third of the rural-based women reported that the distance to the nearest health facility was a hindrance to their accessing health services whilst only 13.5% in the urban areas reported this problem. The time it took to walk to the facility ranged from 5 minutes to 180 minutes (3 hours) averaging 70 minutes in rural areas and 36 minutes in urban areas.

3.4.3 Attitudes and acceptability

Several questions were posed in the questionnaires to unpack the acceptability of services. The results are shown in table 8.

Although the district comprised of diverse cultures and religions, neither culture nor religion reportedly disallowed usage of conventional allopathic medicines. Respondents were also receptive to the idea of taking prophylactic therapy for PMTCT and 87% believed it was effective in preventing HIV transmission. Fifty percent of respondents who either thought that prophylactic therapy for PMTCT was ineffective or did not know, found out about PMTCT through relatives and friends.

Table 8 Acceptability of services

Variable	Category	Percentage
Your religion allows use of medication	Yes	97.1
	No	2.9
Your culture allows use of medication	Yes	100.0
	No	0.0
If counselled about HIV at ANC, you were satisfied with HIV counselling	Yes	85.0
	No	15.0
You would take ARVs if HIV positive	Yes	100.0
	No	0.0
PMTCT medication is effective in preventing HIV transmission	Yes	87.5
	No	1.6
	Don't know	10.9
You would deliver at a health facility	Yes	91.4
	No	8.6
Rate the quality of services here	Good	38.6
	Fair	27.1
	Bad	30.0
	Very bad	4.3
How do you find the staff relationship with patients	Good	58.6
	Fair	40.0
	Bad	1.4
Prefer a female health provider	Yes	12.9
	No	87.1

From FGDs two main themes were found as affecting acceptability of services: the quality of services and the health-worker's attitude.

Generally women were not pleased with the quality of services at health facilities particularly at the hospital. They reported that there was a lot of disorganisation and services did not flow smoothly. In addition, women viewed the level of cleanliness of the facilities, particularly lavatories and delivery wards, as unacceptable, *'unless I'm really forced to, I don't consider to deliver my child here...the toilets are so dirty and the floors so wet and slippery.'*

Regarding health-worker attitudes, lack of adequate personalised care and professional attention was the main cause for concern. Health workers were reportedly rude and unsympathetic:

I came with my mother-in-law to get her tablets. We had difficulties getting transport from the rural areas to here so she was now out of drugs. When we arrived it was late in the afternoon and although the dispensary was open, they wouldn't allow her to take medication because that section was closed for the day. Even after explaining the situation, they were so stubborn and refused to give her. We then had to come back another day which meant

another transport problem and also delay in her taking her pills. So even though the medication was available, we couldn't get it'

Statistics showed that 58% of the women thought staff attitudes towards patients were good whilst the remainder believed there was room for improvement. Additionally, quite a substantial proportion of women believed health providers offered little or no support regarding advice and education as seen in table 9.

Table 9 Health workers' support

	Never %	Sometimes %	Most times %	Always %
Health providers assist with education And counselling	10.0	28.5	28.5	33.0
Health providers assist with advice	7.0	34.0	30.0	29.0
Health providers identify and monitor Complications related to pregnancy	3.0	25.0	36.0	36.0

Women also reported that they did not trust health workers. Staff working at the district's ARV dispensary which provided ARVs for the district reportedly publicized the names of those who regularly took their ARVs there, *'as soon as someone new comes to take their medicines there, they are already announcing her status to the whole district. If I was to test positive today, I wouldn't get my medicines there'.*

Others were concerned about the pre and post test counselling, saying it was, *'too serious'*, and for others *'not effective at all'* saying it did not prepare them for the result nor did it reassure them. Statistics showed that of those who were not satisfied with counselling, 37.5% of the women were not happy with the manner of communication, 37.5% were not happy with the lack of privacy in the environment, and 62.5% thought that inadequate information was given.

3.4.4 Knowledge about PMTCT

Most FGD participants were aware of PMTCT although they were not sure about the stages at which HIV transmission could occur. They described PMTCT as taking drugs at delivery and exclusively breastfeeding the child.

Some women raised concerns about the lack of adequate information given during counselling citing this as a reason for not knowing much about PMTCT. Statistics showed that 12.9% and 15.7% of the women had not been told about mother-to-child transmission

and PMTCT respectively at ANC. FGD participants thought the inadequacy of information was reason enough for women to seek information elsewhere. Statistics showed that altogether 24.3% of participants had learnt about PMTCT through media or from relatives rather than from clinics.

There was also a level of dissatisfaction about the information provided regarding breastfeeding options. The general notion was that exclusive breastfeeding should carry a higher risk of transmission since the child *'sucks more of the infected milk'*, whilst giving the child only a little breast-milk should carry far less risk and replacement feeding carry no risk.

A short test was included in the questionnaires to evaluate women's knowledge about basic PMTCT. Questions included those represented in table 10. The results of the test are shown in table 11.

Table 10 Respondents' knowledge about vertical transmission

	Yes %	No %	Not Sure %
HIV can be transmitted from mother to child	97.1	0.0	2.9
It can be transmitted during pregnancy	48.6	35.7	15.7
It can be transmitted during delivery	90.0	1.4	8.6
It can be transmitted during breastfeeding	82.9	7.1	10.0
It can be transmitted during daily activities of washing, touching or bathing the child	2.8	78.6	18.6
There is medication to prevent HIV transmission to child	89.9	1.4	8.7
Taking medication reduces risk	87.5	1.6	10.9
Delivery by c-section reduces risk	42.9	14.3	42.8
Replacement feeding reduces risk	90.0	2.9	7.1
Mixed feeding increases risk	50.0	20.0	30.0

The average test result was 67% and results ranged from 16.7% to 100%. In total 35.7% of respondents scored less than 66%.

Table 11 Test results: knowledge about PMTCT

Test result/%	Frequency	Percent	Cumulative percent
<50 (poor)	7	10.0	10.0
51-65 (fair)	18	25.7	35.7
66-75 (good)	21	30.0	65.7
>75 (excellent)	24	34.3	100.0

Multivariate analysis of factors affecting knowledge was performed using ordered logit regression. The dependent variable was the level of knowledge depicted by the test results as categorised in table 11. Results of the analysis are shown in table 12.

Table 12 Factors determining level of knowledge

		Knowledge level	
Variable	Category	β	p-value
Age		.071	0.615
Residency	Urban	.284	0.496
	Rural [b]		
Education level	Secondary	.128	0.155
	Primary [b]		
Occupation	Student	.199	0.232
	Informal sector	-.033	0.308
	Formal sector	.101	0.106
	Unemployed [b]		
Wealth index		.065	0.210
Marital status	Married	.233	0.112
	Co-habiting	.001	0.250
	Single [b]		
Who informed about PMTCT	Clinic	.137	0.004*
	Media	.077	0.061*
	Relative/friend [b]		
Decision-maker	Self	.199	0.093*
	Both	.087	0.122
	Partner	.022	0.540
	Relative [b]		
Level of health provider support in counselling and education	Always	.249	0.071*
	Most times	.163	0.092*
	Sometimes	.013	0.113
	Never [b]		

β regression coefficient; [b] base category; *statistically significant at 10% level

The results showed that the source of information on PMTCT, the decision-maker regarding health care use and the level of health provider support in counselling and education were important determinants of the woman's level of knowledge. Greater provider support in education and counselling were associated with better levels of knowledge, whilst the woman being involved in decision-making about her health was also associated with better

knowledge about PMTCT. Additionally, if the woman was informed about PMTCT through media or from a health facility she was likely to have more knowledge than if informed by friends and relatives.

3.4.5 Provider's perspective on barriers to accessing PMTCT

Lack of resources

Providers were asked what constituted the greatest barriers to women accessing PMTCT. The main theme emerging was the issue of unavailability of resources.

'Resources are the greatest hindrance to performance. Rapid test kits run out and it becomes a problem when we keep sending away people. We tend to prioritise on the kits however, starting with pregnant women...But even then, some miss out. For example, out of 56 women registered for ANC in the last 2 months, 39 were tested and the majority of those not testing failed to do so because of unavailability of kits.'

The same problem was faced in provision of drugs. The medicine was donated by a non-governmental organisation, but frequent stock-outs were reportedly hampering efforts to reduce mother to child transmission of HIV.

Late registration: Low frequency of follow-up tests and visits

Most women attending ANC were reportedly in their last trimester. Providers explained that HIV negative women failed to return for testing after the window period making it difficult to exercise PMTCT since their status was not known.

The rate of return of these women for a follow-up test after 3 months is very low and difficult to monitor as most are at home by then or in different facilities or wards. As such one cannot accurately estimate the number of HIV positive women through looking at ANC records. The value could be much higher because we don't know what is happening to them after their first visit.

They can't afford

Providers reported that maternal care charges had affected services. '*Our pregnant women are failing to afford these services. We have seen a gradual decrease in the number of women attending ANC and even those delivering here. Because booking payments are no longer staggered and women have to pay the full amount at once, even more women are failing to*

come. Fortunately a lot of TBAs (Traditional Birth Attendants) are being trained mainly recruited from ZINATHA (Zimbabwe national traditional healers association) and the apostolic faith sect. These are the people who then assist in home deliveries to ensure safety of the baby'.

Failure to carry out instructions

Whilst women were provided with the tablet upon testing positive, reportedly, not all of them went on to take the drug. Worse still, most women failed to come to the clinic within 3 days of giving birth to allow for the child's prophylactic dose.

'You see, perhaps it's forgetfulness or it could be just that one doesn't know exactly when the true labour has started, but we find an unacceptable number of cases of women who don't ingest the medicine and in some instances even fail to come in time for the child's dose'.

3.5 Discussion

As one expert once said, primary barriers to PMTCT are not related to scientific knowledge but to implementation (35). The challenges faced in Zimbabwe are presented in table 13. The findings of this study showed that the central and most obvious barrier to PMTCT is poor access to ANC and delivery services due to inability to pay. These findings are commensurate with findings from other developing countries where inability to pay for health services was cited as a major deterrent to service use (36, 37 and 38).

Given the high, regressive OOP payments exhibited in the study, policies that protect poor households from catastrophic payments are necessary. Although it has previously been shown that pre-payment mechanisms improve ability to afford health services (39), it was interesting to find that ownership of medical aid had no effect on affordability of services. This was to be expected however, considering that medical aid has not been accepted as a method of payment in Zimbabwe since the country experienced hyperinflationary economic instability and credit payments were invalidated (23).

An increase in the wealth index was, as expected, associated with greater ability to afford health services. However, findings also suggested that women who were married had greater potential to afford health services. Again this is similar to findings elsewhere (40).

Table 13 Challenges faced in accessing PMTCT in Zimbabwe

Process	Challenges
Attend clinic	▪ High cost of ANC and delivery ▪ Lack of transport ▪ Poor provider-patient relationship ▪ Poor quality of services ▪ Unacceptable opening hours
HIV counselling	▪ Inadequate information ▪ Ineffective counselling
HIV testing	▪ Unavailability of test kits
Offered drugs	▪ Drug stock-out ▪ Fear breach of confidentiality ▪ Limited opening hours of dispensing unit
Take drugs	▪ Perception of effectiveness ▪ Failure to comply
Drugs to baby	▪ Delayed clinic visit
Safer feeding	▪ Mothers unsure about feeding methods

It has been suggested that being married offers financial stability to the family presuming that there is at least one source of income to cater for household expenses (40). Consequently, some countries have invested in providing social grants to single-parent homes to ensure their financial stability, as well as providing equal opportunity jobs to increase women's participation in economic development (41 and 42). By increasing their role in financial provision for the family, women would also be empowered to make important decisions in the home regarding health (42). Women's decision-making role is a subject that has received much attention in developing nations as it is believed that women take better care of themselves and their family if they have decision-making capacity (43 and 44). Decision-making capacity was also shown to be associated with women's level of knowledge about PMTCT in this study.

Providers also noted that most first ANC attendances were within the last trimester of pregnancy. This practice was because of failure to pay due to unaffordability of services hence resulting in delaying obtaining medical attention. Reports about this behaviour are not new in the literature. Studies have shown that one of the mechanisms of coping with ill-health among poorer populations is delaying seeking treatment (45, 46 and 47). However, the issue of delaying the first ANC visit has 3 potential drawbacks. Firstly, it could hamper the implementation of more effective prophylactic ARV regimens which commence at the 14th

week of pregnancy. Secondly it compromises the health of the mother and the child as routine monitoring and/or treatment of infections is not carried out. Finally, as identified in the study, late registration results in failure to verify negative HIV test results as most women will have no contact with the health facility by the end of the 'window-period'. This points to a need therefore, to educate women about the importance of early ANC visits in order to secure access to PMTCT and ensure better health.

Communication of education and information generally constituted a major barrier to services. Narratives from FGD participants showed a desire for better relationships between health workers and patients as well as more adequate information through effective communication. Issues such as poor counselling, poor perception about effectiveness of drugs, delays in returning to the clinic with the baby, uncertainty about infant feeding methods and failure to comply with drug regimens are all indications of poor communication between the health system and patients. Although some women exhibited excellent knowledge about PMTCT, quite a significant number showed little or no understanding of PMTCT. The gap in knowledge could thus be responsible for non-utilisation of PMTCT services. In Dar es Salaam, Tanzania for example, women's lack of knowledge of the risk of mother-to-child transmission affected HIV test acceptance (48).

It is therefore suggested that there is a need for improving communication between health workers and individuals and educating women about PMTCT. Advances towards educating women in South Africa have seen the implementation of a program called mothers-to-mothers-to-be (M2M) (49). M2M offers psychosocial support to newly diagnosed mothers by "mentor mothers" who have practised PMTCT themselves. Mentor mothers make follow-up appointments and educate these mothers about their treatment and the importance of taking antiretroviral drugs.

A third aspect of access that was identified in the study was the availability of services. Availability of 'the right services in the right quantity at the right time' was found to be compromised in the participating facilities. The study revealed that the opening times of facilities were inconvenient for women. These findings are similar to those found in India where women under-utilised services because they could not attend the clinics at the suggested times as they were working in the fields or trading goods (50). Utilisation of services was subsequently boosted by opening a Saturday clinic in the affected regions.

Findings also showed that some women had been turned away from testing for HIV due to unavailability of test kits. Furthermore, lack of transport was reportedly a major barrier to reaching health facilities resulting in limited clinic or hospital visits. This result was similar to findings from Eastern Cape in South Africa where health systems failures, including lack of transport and resources, were blamed for women's failure to access PMTCT (51).

The last and important aspect of access identified in the study was the acceptability of services. Women were deterred from use of health facilities where they deemed the quality of services to be poor and where they did not have good relations with providers. The quality of services has been cited in many studies internationally and regionally as affecting utilisation of services (51-54). In some instances individuals would rather pay more for better quality services than less for poor quality services (53). Findings also suggested that provider-patient relationships were slightly constrained and thus constituted a barrier.

These findings point to a need to strengthen the user's capacity to benefit from the health system through establishing policies that improve financing mechanisms, provision of resources and provider-patient relationships.

There were, however, limitations in this study. The major limitation was the relatively small sample size which may not have been representative of the population. In addition, the study concentrated on women already attending health services at facilities. This meant that women in the community who may have been totally unable to access health care were left out of the review. However, it is expected that the findings of the study represent challenges faced even by those women who were not at the facilities at the time of the study. A further limitation was that the participants were not selected to be HIV positive women who were in need of the PMTCT services. It is expected that the results would have been more representative of challenges faced if actual HIV positive women were interviewed and spoke out on their thoughts. However, the presence of stigmatisation associated with HIV/AIDS made it difficult to choose respondents according to their HIV status as it would have been evident if some women were selected to participate while others were not. In essence, this method of sampling was done to protect women from facing discrimination.

3.6 CONCLUSION

The study conducted has shown the importance of 4 aspects of access: affordability, information, availability and acceptability, and the ways in which they affect utilisation of

PMTCT services. The greatest of these barriers was inability to pay for services. Inability to pay was the main reason for low rates of ANC attendance and facility-based delivery. Furthermore, failure to communicate important information because of ineffective, inadequate and confusing counselling rendered little beneficial information to women resulting in them seeking (often unreliable) information elsewhere. Other barriers of unavailability of HIV test kits and transport to health facilities were important determinants of ultimate access to PMTCT. Finally quality of services in terms of hygiene standards and provider-patient interactions left much to be desired of the health system.

This paper has shown that it is mainly social and practical barriers faced by prospective clients that need to be addressed. Results suggest that key improvements would include examining payment mechanisms that do not lead to catastrophic expenditure such as pre-payment mechanisms, but also more importantly to ensure that facilities accept these alternative health care payment mechanisms. In addition, while it is important to improve the state of health facilities, establishing productive interactions between the health system and patients could see more women making well-informed decisions and hence utilising ANC and PMTCT services. Finally, health workers are central to the successful implementation of health services and hence need to be involved in the development and successful execution of PMTCT strategies.

In conclusion, while PMTCT has been scaled up through integration into ANC services, it is important to address the challenges that already exist in accessing ANC services as these inherently affect access to PMTCT. Progress will however, depend largely on greater stewardship from the government of Zimbabwe and committed support of foreign donors and non-governmental organisations in provision of resources.

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CHAPTER 4

POLICY BRIEF

THE NEED FOR PATIENT ORIENTED HEALTH SERVICES

ADDRESSING WOMEN'S CONCERNS REGARDING PMTCT IN ZIMBABWE

Introduction

HIV is the leading cause of death and disease among women of child-bearing age worldwide (1). In sub-Saharan Africa up to 60% of people living with HIV are women, posing serious concerns for their children. In 2008, it was estimated that in low and middle income countries, up to 1.4 million pregnant women were living with HIV (2). Without intervention, as much as 40% of children born to these women would also be HIV positive and may never live to see their 5th birthday (2).

Whilst the drive towards the elimination of adult HIV is becoming well established in developing countries, that of paediatric HIV still leaves a lot to be desired. Indeed, effective strategies, known collectively as the prevention of mother to child transmission of HIV (PMTCT), have been developed to prevent paediatric HIV, but the concern remains the ability to provide these services to all people in need of them.

With the dawn of the 21st century came the expansion of coverage of PMTCT services in HIV-affected countries. PMTCT is now mainly provided through existing services such as antenatal care (ANC) thus increasing access while minimising costs by making use of already existing resources and infrastructure. However, the significantly high HIV-specific child mortality rates show that the global commitment to eliminate paediatric HIV has not had much success (3).

In Zimbabwe, more than a decade has elapsed since a cost-effective PMTCT package was first piloted and then integrated into antenatal care (ANC) (4). However, HIV-specific under-five mortality has continued to be high suggesting a low uptake of PMTCT services (5). Evidence has shown that women in Zimbabwe increasingly drop out of the PMTCT programme at each stage from attending ANC, to HIV counselling, then testing, and finally administering ARVS to mother and baby (6). This is highly detrimental to any efforts towards combating paediatric HIV/AIDS especially considering that Zimbabwe falls within the top ten countries in the world with the highest HIV disease burden among pregnant

women (2). With increased pressure to achieve the millennium development goals (MDGs), it is crucial to find ways of reducing child mortality through effective targeted strategies.

Currently Zimbabwe offers PMTCT services free of charge in facilities that provide ANC. PMTCT includes free HIV counselling and testing in clinics, a single dose of nevirapine for the mother during labour and for the baby at birth and counselling on breastfeeding options. However, in order for women to be introduced to the PMTCT programme, they need to attend ANC. While PMTCT services are free, ANC is on the other hand, not free, posing concerns on the affordability of the services. In addition to this, the dollarization of the Zimbabwean economy in 2009 may have had serious implications on access to health care since USD denominated user fees were pegged higher than they were when expressed in Zimbabwean Dollars prior to the hyperinflation (7). Each ANC visit in 2010 cost USD5 in urban clinics and hospitals and in rural hospitals. Rural clinics did not charge ANC fees but instead charged higher delivery fees (8). The average cost of delivery in rural areas was USD50 in hospitals and USD80 in clinics.

This policy brief draws on research conducted in Zimbabwe to assess the barriers that women face in accessing PMTCT services. The findings from the study will be useful in informing policy that seeks to improve access to PMTCT services. By addressing the barriers that women face, the uptake of services could increase and hence contribute to the reduction in vertical transmission of HIV and thus child mortality.

Key findings

- As seen in figure 8, 68% of women find the cost of ANC and delivery too high.
- Figure 9 shows that more than 8.5% of women spent more than 10% of their total monthly expenditure on ANC and delivery payments, suggesting challenges with the affordability of health care. This could possibly lead to impoverishment and prevent women from accessing services including PMTCT.

Figure 8 Main barriers to accessing PMTCT

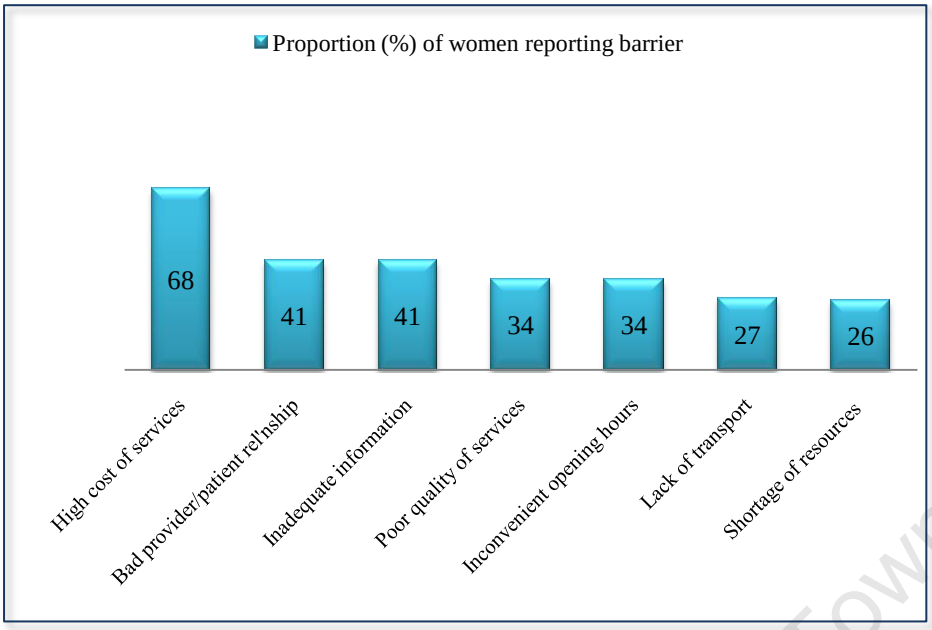
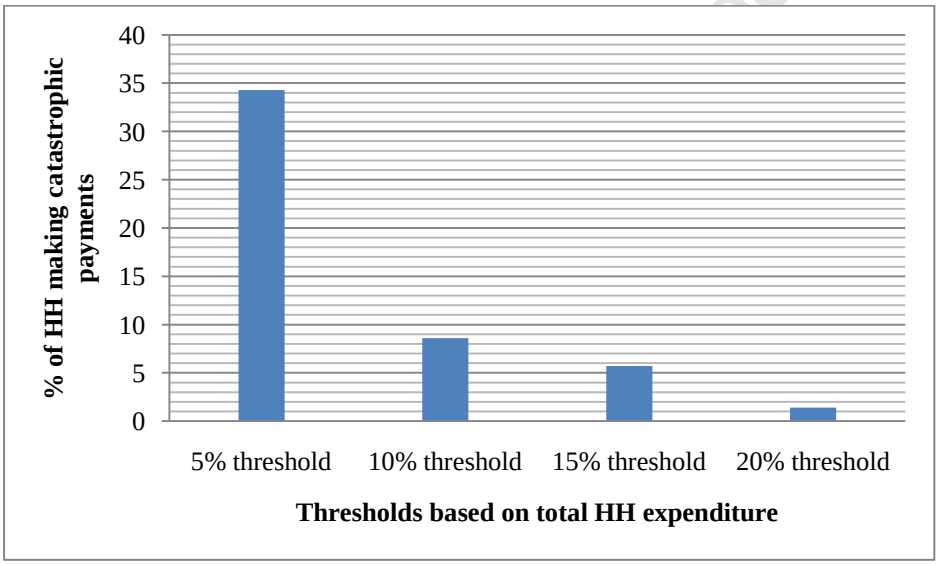


Figure 9 Catastrophic healthcare payments



HH=household

- Forty-one percent of women reported that health workers offered inadequate information, as seen in figure 8. Inadequate information and ineffective counselling results in a gap in knowledge about vertical transmission and PMTCT which could potentially lead to failure to comply to PMTCT strategies. This is evidenced in women's misconception that mixed feeding is better than exclusive feeding since the child '*sucks more of the infected milk'* in exclusive breastfeeding.

- Figure 9 also shows that the low quality of services including the poor cleanliness of facilities are deterrents for service use for 34% of women while poor provider-patient interactions are deterrents for service use for 41% of women. This means that authorities need to consider making ANC more acceptable for women in order for them to be able to utilise PMTCT services.
- Finally, figure 8 shows that lack of transport and shortages of drugs and other resources prove a challenge for 26% of women which directly affects access to PMTCT.
- Primary barriers to accessing PMTCT lie in the barriers faced in accessing ANC services including the cost of ANC and the acceptability of ANC services. None of the barriers expressed were linked to social or cultural issues of fear, discrimination or perceptions about medicines. Instead the main barriers were linked to the health system's failure to meet the needs of pregnant women.

Policy options

- Remove user fees for pregnant women
  - Remove maternal user fees or reduce the cost of fees since revenue can be generated from other services that facilities provide. Removal of user fees has been shown to increase utilisation of and access to health services especially among the poor (9-11). However, it requires careful consideration and gradual phasing in depending on the state of the economy as well as the ability to continue providing quality services in the absence of revenue generated from ANC and delivery.
- Increase women's access to reliable information
  - Disseminate more information about PMTCT through media such as short informative adverts in radios, on television and in newspapers
  - Set up posters with information about PMTCT at shopping complexes and in women's common meeting areas such as churches and at clinics
  - Involve community leaders in disseminating information by educating them about PMTCT and thus give them the opportunity to discuss PMTCT with their community at their usual communal meetings
- Improve the quality of services

- Conduct supervisory visits to clinics more frequently to assess cleanliness and quality of services. These visits may be conducted by province level or district level health officers or managers.
- Ensure accountability for quality of services by staff in charge of facilities by holding them responsible for the state of hygiene and organisation.
- Involve health workers in decision making towards improving hygiene standards, organisation and general quality of services.

- Provide training courses to health workers on issues pertaining to how to engage with patients in a more acceptable manner
- Engage patients in health decision making by providing written material to compliment counselling and consultation sessions in order to improve compliance to PMTCT strategies.

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CHAPTER 5

TECHNICAL APPENDICES

Appendix 1: Sample Medical Research Council of Zimbabwe (MRCZ) approved consent form for cross sectional survey

MRCZ approval number: MRCZ/B/81
REC REF UCT: 470/2009

INFORMED CONSENT FORM

PROJECT TITLE: ASSESSING THE BARRIERS TO ACCESSING PREVENTION OF MOTHER TO CHILD TRANSMISSION (PMTCT) SERVICES IN MARONDERA, ZIMBABWE

Principal Investigator: Ms Farai Beverley Magaso
Phone numbers: +263914177441, +27728282490

What you should know about this research study:

- We give you this consent so that you may read about the purpose, risks, and benefits of this research study.
- Routine care is based upon the best known treatment and is provided with the main goal of helping the individual patient. The main goal of research studies is to gain knowledge that may help future patients.
- We cannot promise that this research will benefit you. Just like regular care, this research can have risks that can be serious or minor.
- You have the right to refuse to take part, or agree to take part now and change your mind later.
- Whatever you decide, it will not affect your regular care.
- Please review this consent form carefully. Ask any questions before you make a decision.
- Your participation is voluntary.

PURPOSE

You are being asked to participate in a research study of assessing the barriers that pregnant women are facing in accessing the prevention of mother to child transmission (PMTCT) services**.** The purpose of the study is to determine the problems that pregnant women may be facing in accessing PMTCT services designed for their use and therefore to guide implementation strategies of scaling up PMTCT projects You were selected as a possible participant in this study because you are a pregnant woman and therefore you are the population whose opinion the research is interested in. A total of 75 women shall participate in this study.

PROCEDURES AND DURATION

If you decide to participate, you will be required to answer questions in a face-to face interview with a trained research assistant. The interview will be based on a structured questionnaire and the interviewer will explain the questions in the language you prefer. It will take approximately 30 minutes of your time.

RISKS AND DISCOMFORTS

You will not be exposed to any physical danger when you take part in this research. However, you may feel uncomfortable answering some questions and vulnerable disclosing your personal experiences. The interview may provoke anxiety or distress as you may be reminded of some difficulties you are currently facing. If at any time you feel uncomfortable answering any question, you may refuse to do so. There will be no negative implications of doing so.

BENEFITS AND/OR COMPENSATION

We cannot and do not guarantee or promise that you will receive any benefits from this study. However, the results of this research are set to benefit you and your community in the future as proposed strategies to improve PMTCT services will be built on them. The research is intended to benefit pregnant women particularly since the PMTCT services should be made accessible to them. The greatest effort will be made to ensure results are made available to you or your community but the primary objective is to make them known to the people who make decisions about the services provided. You will not be paid or compensated to take part in this study.

CONFIDENTIALITY

If you indicate your willingness to participate in this study by signing this document, we do not plan to disclose this information to any persons or agencies. Your name or identification information will not appear on any of the questionnaires. In addition, the consent form will in no way be linked to your questionnaire. Any information that is obtained in connection with this study that <u>can</u> be identified with you will remain confidential and will be disclosed only with your permission. Study data will only be accessible to the principal investigator of the research.

VOLUNTARY PARTICIPATION

Participation in this study is entirely voluntary. If you decide not to participate in this study, your decision will not affect your future relations with this clinic, its personnel, and associated hospitals or with the University of Cape Town. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

OFFER TO ANSWER QUESTIONS

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

The date you sign this document to enroll in this study, that is, today's date, MUST fall between the dates indicated on the approval stamp affixed to each page. These dates indicate that this form is valid when you enroll in the study but do not reflect how long you may participate in the study. Each page of this Informed Consent Form is stamped to indicate the form's validity as approved by the MRCZ.

_____ _____

Name of Research Participant (please print) Date

_____ _____ AM

Signature of Participant Time PM

_____ _____

Signature of Witness Signature of Staff Obtaining Consent

_____

Signature of Interpreter (where necessary)

YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research subject or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe on telephone 04 791792 or 04 791193.

Appendix 2: Sample MRCZ approved shona consent form for cross sectional survey

MRCZ approval number: MRCZ/B/81
REC REF UCT: 470/2009

FOMU ROKUTENDERWA KUNERUZIVISO

MUSORO: KUWONGORORA ZVIMHINGAMUPINI ZVEKUWANA RUBATSIRO RWEKUDZIVIRIRA KUTAPUKIRA KWECHIRWERE CHE HIV KUVANA KUBVA KUMADZIMAI AKAZVITAKURA (PMTCT) KUMARONDERA, ZIMBABWE

Muongorori: Ms Farai Beverley Magaso
Runhare: +263914177441, +27728282490

Zvamunofanirwa kuziva pamusoro petsvagurudzo iri:

- Tinokupayi fomu iri kukuzivisai chinangwa, njodzi nemubairo wetsvagurudzo iri.
- Rubatsiro rwehurwere rwamunowana mazuvaose runopiwa riinechinangwa chokubatsira murweri. Chinangwa chetsvagurudzo ndechekuwana ruzivo runobatsira pavarwere vamangwana.
- Hativimbisi kuti tsvagurudzo iri richakubatsirai. Serubatsiro rehurwere rwemazuva ose tsvagurudzo inogona kuva nenjodzi yakayipisa kanashoma.
- Munemaruramiro ekuramba kubatirana mutsvagurudzo kanakubvuma kubatirana parizvino asi muchizogona kusandura pfungwa pamberi.
- Chero zvamunenge mafunga hazvikanganise rubatsiro rwenyu rwepakiriniki rwemazuva ose.
- Nyatsoongororai fomu iri mugozobvundza mibvunzo yamunenge muinayo musati maita sarudzo
- Makasununguka kubatirana netsvagurudzo kana kusabatirana naro, zvirikwamuri.

CHINANGWA

Murikukumbirwa kubatirana netsvagurudzo rokuwongorora zvimhingamupini zvekuwana rubatsiro rwekudzivirira kutapukira kwechirwere che HIV kuvana kubva kumadzimai akazvitakura. Chinangwa chetsvagurudzo ndechokuda kuziva matambudziko akatarisana nemadzimai akazvitakura mukuwana

rubatsiro rwekudzivirira kutapukira kwechirwere che HIV kuvana kubva kumadzimai akazvitakura zvichizobatsira kutungamira mukushandiswa kwemazano ekuwedzera zvirongwa zwePMTCT. Zvinogoneka kuti mubatirane mutsvagurudzo iri nokuti murimudzimai akazvitakura saka ndimi muneruzivo rurinani patsvagurudzo redu. Tsvagurudzo iri richabvunzurudza madzimai akazvitaruka anopfura 75.

ZVICHAITWA NENGUVA YAZVICHATORA

Kana mukafunga kutora sarudzo yokubatirana patsvagurudzo iyi munotarisirwa kupindura mibvunzo yamuchabvunzwa makatarisana nemubatsiri wetsvagurudzo akadzidziswa. Bvunzurudzo ichange yakanangiswa nemibvunzo yakarongwa uye mubvunzi achakutsananguriraimibvunzo nemutauro wamunonzwisisa. Zvinogona kutora maminetsi angasvika makumi matatu enguva yenyu.

NJODZI

Hamuzopinzwi munjodzi kanamabatirana netsvagurudzo iyi. Asi mungangosanzwa kugadzikana pakupindura mimwe mibvunzo nokuburitsa pachena zvamakapfura nazvo muhupenyu. Bvunziridzo inogona kukonzera kusagadzikana kana kunetsekana pamusoro pekurangaridzwa zvimwe zvezvinhu zvakaoma zvamurikupfura nemazviri. Kana mukangonzwa kusagadzikana mukupindura mimwe mibvunzo munogona kuramba kuipindura. Panenge pasina chakaipa mukuramba.

MIBAIRO NEMIBHADARO

Hatisimbisi kana kuvimbisa kuti muchawana mibairo mutsvagurudzo iyi.

Asi zvichabuda mutsvagurudzo iyi zvichabetsera imi kana vemunharaunda muneramangwana sezvo mazano ekuvandudza rubatsiro rwePMTCT achange achibva pano. Tsvagurudzo iyi yakanangana nokubatsira madzimai akazvitakura sezvo rubatsiro rwePMTCT ruchifanirwa kuwanikwa navo. Simba rose richaiswa mukuyedza kukuzivisai nevenharaunda yenyu zvinenge zvabuda mutsvagurudzo iyi, asi chinangwa chikuru kuzivisa vanhu vanoita sarudzo pamusoro perubatsiro rwamunopiwa.
Rubatsiro rwamunenge mapa patsvagurudzo iyi harubhadharwi.

KUCHENGETEDZWA KWEZVAKAVANZIKA

Mukabvuma kubatirana netsvagurudzo iyi nokusayina tsamba iyi, hatizoisi pachena umbowo hwenyu kana kuzivisa ani nani. Zita renyu kana umbowo hwekuti ndimi ani hazwizoiswi pamapepa emibvunzo. Pamusoro paizvozvo bepa rino harisikuzombobatanidzwa nebepa remibvunzo. Umbowo hwese unogona kuwanikwa mutsvagiridzo iyi unogona kuzivisa kuti ndimi ani uchachengetedzwa wakavanzikwa uyezve uchizogona kuziviswa kana matendera chete. Umbowo wetsvagurudzo iyi uchange uchingozikanwa nemuongorori wetsvagurudzo chete.

KUBATIRANA KUNESARUDZO RWAKASUNUNGUKA

Kubatirana netsvagurudzo iyi kunesarudzo rwakasununguka. Mukange mafunga kusabatirana netsvagurudzo iyi sarudzo yenyu hayikanganise ukama hwenyu nekiriniki,

nevashandi vayo nezvipataro zvinodyidzana nayo kana neUnivhesiti ye Cape Town. Kana mukasarudza kubatirana netsvagurudzo iyi makasununguka kumisa kubatirana nayo nenguva ipi zvayo pasina mirango.

MVUMO YEKUBVUNZA MIBVUNZO

Musati masayina fomu munotenderwa kubvunza mibvunzo yamuyinenge muyinayo pamusoro pechipi nechipi chetsvagurudzo iyi zvingadayi zvisina kujeka kwamuri. Munogona kutora nguva yamunoda kufunga nezvazvo.

MVUMO

Murikuita sarudzo rokubatirana kana kusabatirana netsvagurudzo iyi. Kusayinira kwenyu chiratidzo chekuti maverenga mukanzwisisa umbowo wamapiwa, mukapindurwa mibvunzo yenyu yose, uye mukabvuma kubatirana netsvagurudzo iyi.

Musi wamuchasayina mapepa ano kubatirina netsvagurudzo ino, zvichireva musi wanhasi UNOFANIRWA kunge uripakati pemazuva anoratidzwa pachitamba chekutenderwa kwetsvagurudzo iyi chiripamapepa ano. Mazuva awa anoratidza kuti mapepa ano achirikushanda musi wamunobatirana netsvagurudzo iri asi haaratidzi nguva yamuchatora muchibatirana netsvagurudzo. Rimwe nerimwe bepa remapepa ano efomu rekutenderwa rineruziviso rakadhindwa nechitamba kuratidza kuti fomu richirikushanda maererano nemvumo yeMedical Research Council ye Zimbabwe (MRCZ).

_____ _____

Zita renyu Zuva

_____ _____ AM

Siginecha yenyu Nguva PM

_____ _____

Siginecha yavakatarisa Siginecha yemushandi apiwa mvumo

_____

Siginecha yemududziri

MUCHAPIWA BEPA RIRIMUFANANIDZO WEIRI KUTI MUZVICHENGETERE

Kana muyinemibvunzo maererano netsvagurudzo ino kana mapepa ano inopfurira iyoyamapindurwa nemuongorori inosanganisa mibvunzo yezvetsvagurudzo ino, maruramiro enyu semubatirani wetsvagurudzo iri, kana kukwara mutsvagurudzo iyi, kana kuti muchinzwa sekunge musina kubatiwa zvakanaka huye muchida kutaura nomunhu asiri mushandi wetsvagurudzo iyi, sunungukayi kuzivisa veMRCZ. Runhare rwavo runoti 04 791792 kana kuti 04 791193.

Appendix 3: Survey Questionnaire

ASSESSING THE BARRIERS TO ACCESSING PREVENTION OF MOTHER TO CHILD TRANSMISSION (PMTCT) SERVICES IN MARONDERA, ZIMBABWE

DATE OF INTERVIEW ...../...../.....

INTERVIEWEE NUMBER place sticker here

FACILITY NAME……

NAME OF INTERVIEWER……..

SECTION A: SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

1.	How old are you?	☐☐
2.	What is your current marital status?	Married……..1 Co-habiting.....2 Single……..3 Other (specify)……..4 No response.....97
3.	What is the highest level of education that you have completed?	None.....1 Primary……..2 Secondary……..3 Tertiary……..4 No response.....97
4.	What is your religion?	Traditional……..1 Roman Catholic……..2

		Pentecostal……3 Apostolic sect……4 Other Christian……5 Muslim……6 None……7 other _____ 8 (specify) No response……97
5.	Are you currently employed or a student?	Unemployed……1 Employed ……2 Student……3 No response……97
6.	If employed, what is your occupation, that is, what kind of work do you mainly do?	Farmer……1 Trader……2 Employed in the formal sector……3 No response……97
7.	Are you on any medical aid?	Yes……1 No……0 No response……97
8.	How many people live in your household? By 'household' I mean people that you live with and share food with.	☐☐
9.	Who is the head of your household? By this, I mean, who is the person who usually makes the important decisions in the household	Husband……1 Self……2 Father……3 Mother……4 Child……5

		Brother/sister……6 Grandparent……7 Other relative……8 Other (specify)……9 _____ No response.....97
10.	Is the head of the household employed?	Yes……1 No……0 No response.....97
11.	On average, how much is the monthly expenditure of the household?	USD$.....
12.	To which ethnic group do you belong?	Manyika……1 Matonga……2 Mavhitori.....3 Makaranga.....4 Makorekore.....5 Mazezuru.....6 Mandau.....7 Malawi.....8 Other (specify).....9 _____

SECTION B: KNOWLEDGE ABOUT PMTCT

13.	Have you ever heard of HIV or an illness called AIDS?	Yes……1 No……0 No response.....97

14.	Do you know where one can go to get tested for HIV?	Yes.....1 No.....0 No response.....97
15.	Can HIV be spread from a mother to her child?	Yes.....1 No.....0 Don't know.....99 No response.....97
16.	If yes, please indicate whether or not it is spread at any of the following stages using yes=1, no=0, don't know=99	

	Yes	No	Don't know
During pregnancy	1	0	99
Delivery	1	0	99
Breastfeeding	1	0	99
During daily activities e.g. bathing, hugging	1	0	99

17.	Is there anything a pregnant woman can do to avoid or reduce chances of spreading HIV to her child?	Yes.....1 No.....0 → 20 Don't know.....99 → 20 No response.....97
18.	Are there any special medications that a doctor or a nurse can give to a woman infected with HIV to reduce the risk of transmission to the baby?	Yes.....1 No.....0 Don't know.....99 No response.....97
19.	If yes, do you think prevention of mother to child transmission (PMTCT) medication is effective?	Yes.....1 No.....0 Don't know.....99 No response.....97
20.	Can replacement feeding also reduce the risk of HIV	Yes 1

	transmission from a mother to her child? By replacement feeding, I mean feeding your baby formula milk or other food in place of breastfeeding	No.....0 Don't know.....99 No response.....97
21.	Can delivering by Caesarean section, that is delivering your baby through surgery rather than normal delivery, also reduce the risk of HIV transmission from a mother to her child?	Yes.....1 No .....0 Don't know.....99 No response.....97
22.	Can mixed feeding, that is breastfeeding and feeding your baby other food or formula milk at the same time, also reduce the chances of HIV transmission from a mother to her child?	Yes.....1 No.....0 Don't know.....99 No response.....97
23.	Where did you find out about PMTCT?	At a health facility……1 From friends/relatives……2 Through the media……3 Other (specify)……4 No response.....97

SECTION C: PRACTICES, ATTITUDES TOWARDS PMTCT AND ACCEPTABILITY OF PMTCT SERVICES

24.	Who usually makes decisions about health care for you?	Self……1 Partner……2 Both of you……3 Someone else(specify).....4 _____ No response.....97
25.	Where do you normally seek ANC?	This facility……1 Other facility……2

		No response.....97
26.	As part of your antenatal care visits during this pregnancy were you ever told about babies getting HIV from their mother?	Yes.....1 No .....0 Don't know.....99 No response.....97
27.	As part of your antenatal care visits during this pregnancy were you ever told about things to do to prevent transmitting HIV to your baby?	Yes.....1 No .....0 Don't know.....99 No response.....97
28.	As part of your antenatal care visits during this pregnancy were you ever told about getting an HIV test?	Yes.....1 No .....0 Don't know.....99 No response.....97
29.	Does your culture allow you to use medication?	Yes.....1 No.....0 No response.....97
30.	Does your religion allow you to use medication?	Yes.....1 No.....0 No response.....97
31.	Have you ever been offered counselling for HIV during your ANC visit?	Yes.....1 No.....0 Don't know.....99 No response.....97
32.	Were you satisfied with the counselling?	Yes.....1 No.....0 No response.....97

33.	If no, why weren't you satisfied? Indicate with yes=1, no=0,		
		Yes	No
	The language used was inappropriate	1	0
	The manner of communication was inappropriate	1	0
	Not enough information was given	1	0
	The environment was not good enough	1	0
	Other reason (specify)	1	0
34.	Have you ever been tested for HIV as part of the ANC?	Yes……..1 No……..0 No response.....97	
35.	Was it offered/or required?	Offered……..1 Required.....0 No response.....97	
36.	If you were not tested, what was your reason for not testing (can be more than one reason)? Please indicate with yes=1, no=0		
	Can't afford		
	Don't know where to go		
	Testing site difficult to get to		
	Scared of test results		
	Fatalistic/nothing can be done		
	No personal benefit		
	Confidentiality may be breached		
	No perceived risk of HIV		
	Scared that people in the community may judge you		

	Scared that the health workers may judge you		
	Other(specify)		
37.	If your results were to show that you are HIV positive, would you share the results with your husband/partner?	Yes…….1 No…….0 Don't know……..99 No response.....97	
38.	If no or don't know, what would your reason be for Potentially not telling him?		
		Yes	No
	Fear of violence	1	0
	Fear of being abandoned	1	0
	Fear of being blamed	1	0
	Other	1	0
	(specify)		
39.	Do you believe HIV positive women are treated unfairly at this clinic?	Yes……..…..1 No……..0 No response.....97	
40.	Many different factors can prevent women from getting medical advice or treatment for themselves. When you are sick and want to get medical advice or treatment, is each of the following a big problem or not?	Yes=1, no=0	
		Yes	No
	Getting permission to go?		
	Getting money needed for treatment?		
	The distance to the health facility?		
	Having to take transport?		
	Not wanting to go alone?		
	Concern that there may not be a female health provider?		

	Concern that there may not be any health provider?		
	Concern that there may not be drugs available?		
	Other		
	(specify)		
41.	Health providers are trained to assist you in any problems or with advice during your pregnancy. For the next questions please indicate to what extent they assist you with the following using 1=always, 2=most of the time, 3=sometimes, 4=never. a. Education and counselling about pregnancy and/or PMTCT b. Advice on any medical issues c. Identifying and monitoring any complications in your pregnancy	☐ ☐ ☐	
42.	Would you deliver at this facility?	Yes.....1 No.....0 No response.....97	
43.	If no, why wouldn't you deliver here?		
		Yes	No
	Family disallows	1	0
	Too far	1	0
	Don't trust facility	1	0
	Poor quality services	1	0
	Not necessary	1	0
	No female provider	1	0
	Other (specify)	1	0
44.	How would you rate the quality of services here?	Good.....1 Ok.....2 Bad.....3 Very bad.....4	

45.	How do you find the staff relationship with patients here?	Good……..1 Fair……2 Bad……3
46.	If you were HIV positive, would you breastfeed your child?	Yes……..1 No……0 No response……97
47.	If yes, how would you breastfeed your child?	Exclusive breastfeeding……1 Mixed feeding……2 No response……97
48.	What would your main reason be for breastfeeding?	It is culturally the most acceptable way of feeding……1 It is the best way to feed a baby….2 Unavailability of formula milk……..3 Un-affordability of formula milk….4 Unavailability of safe water for formula feeding……5 Fear of being identified as HIV positive……6 Other (specify)……7 No response…… 97
49.	If you had to take drugs for PMTCT would you consider taking them?	Yes……1 No……0 No response……97

SECTION D: AVAILABILITY AND AFFORDABILITY

50.	If you were to walk here from your home, how long would it take you?	……hrs……minutes

51.	Do you require transport to get here?	Yes……1 No……0 No response……97
52.	If yes is the cost of transport too high?	Yes……1 No……0 No response……97
53.	Do you always find a provider each time you come here?	Yes……1 No……0
54.	How long do you normally wait before being served?	……hrs……minutes
55.	Do you find the waiting time too long?	Yes ……1 No……0 No response……97
56.	Have you ever found the opening time of the clinic inconvenient?	Yes……1 No……0 No response……97
57.	Are PMTCT services available here?	Yes……1 No……0 Don't know……99 No response……97
58.	If not, have you been told where PMTCT services are offered?	Yes……1 No……0 No response……97
59.	Is this place within a reasonable distance from here?	Yes……1 No……0 Don't know……99 No response……97
60.	Are you asked to pay for services here?	Yes……1

		No……0 → 62 No response……97
61.	Do you find it difficult to pay for these services?	Yes……1 No……0 No response……97
62.	If no why not?	Free services……1 Medical aid pays……2 Exempted from paying……3 Other (specify)……4 _____
63.	During your pregnancy did you have to borrow money to pay for healthcare?	Yes……1 No……0 → 65 No response……97
64.	If yes how much money did you borrow?	US$
65.	During your pregnancy, did you have to sell personal or household items in order to pay for healthcare?	Yes……1 No……0 No response……97
66.	In coming to this clinic, how much did you pay for:	USD
	Transport	
	User fees	
	Medicines	
	Someone to take over your tasks while you are here including childcare	
	Food during visit	
	Phoning or texting	
	Other	
	(specify)	

67.	Do you find the total cost of seeking treatment too high, in other words, did you find it easy or difficult to incur all these expenses?	Easy……1 Difficult……2 Neither easy nor difficult……..3
68.	Which of the following best describes the type of house you live in?	House or brick structure on a separate stand or yard or on farm…1
		Traditional dwelling/hut/structure made of traditional materials……..2
		Dwelling/house/flat/room in backyard……3
		Informal dwelling/shack IN the backyard of a formal house……..4
		Informal dwelling/shack NOT in backyard e.g. in an informal/squatter settlement or on farm……5
		Room on a shared property……..6
		Worker's hostel……7
		Other……8
		If other, specify
69.	What is the main material of your house's walls?	Bricks & plaster/finished.....1
		Bare brick/cement block.....2
		Corrugated iron/zinc.....3
		Wood.....4
		Plastic.....5
		Cardboard.....6
		Mixture of mud and cement.....7
		Wattle and daub.....8
		Mud.....9

		Thatching.....10
		Other.....11
		If other, specify
70.	What is the main material of your house's roof?	Tiles 1
		Corrugated iron/zinc.....2
		Thatching.....3
		Asbestos.....4
		Plastic.....5
		Cardboard.....6
		Other.....7
		If other, specify
71.	What is the main source of drinking water for members of your household?	Piped (tap) water in dwelling.....1
		Piped (tap) water on site or in yard.....2
		Borehole on site.....3
		Rain water tank on site.....4
		Neighbour's tap.....5
		Public/communal tap (either free or paid).....6
		Water carrier/tanker.....7
		Borehole off site/communal.....8
		Flowing water/stream/river.....9
		Well.....10
		Other.....11
		If other, specify

72.	What type of toilet does your household have?	Flush toilet (connected to sewer)....1
		Flush toilet (with septic tank).....2
		Pit latrine with ventilation pipe.....3
		Pit latrine without ventilation pipe..4
		Bucket toilet.....5
		No facility/bush/field.....6
		Other.....7
		If other, specify
73.	What is the main source of energy for cooking in your household?	Electricity from mains.....1
		Electricity from generator.....2
		Gas.....3
		Paraffin.....4
		Wood.....5
		Coal.....6
		Animal dung.....7
		Solar energy.....8
		Other.....9
		If other, specify
74.	Does your household own cattle, livestock or chickens?	Yes.....1 No.....0 → 79
75.	If yes, how many cattle does the household own?	_____cattle None.....0 Don't know.....99

76.	How many goats does the household own?	_____goats None.....0 Don't know.....99
77.	How many chickens does the household own?	_____chickens None.....0 Don't know.....99
78.	Does the household own any other animals? (specify) If so which ones and how many?	_____no. Animals None.....0 Don't know.....99
79.	Does your household own a car?	Yes.....1 No.....0
80.	Does your household own a truck?	Yes.....1 No.....0
81.	Does your household own a bicycle?	Yes.....1 No.....0
82.	Do you have anything else you would like to say about your experience of seeking or receiving care at this facility?	

Thank you for your time.

Appendix 4: Shona Questionnaire

Bepa rezvemibvunzo wetsvagurudzo

KUWONGORORA ZVIMHINGAMUPINI ZVEKUWANA RUBATSIRO RWEKUDZIVIRIRA KUTAPUKIRA KWECHIRWERE CHE HIV KUVANA KUBVA KUMADZIMAI AKAZVITAKURA (PMTCT) KUMARONDERA, ZIMBABWE

Zuva ...../...../.....

Ndewechingani arikubvunzwa

Zita rechipatara……

Zita re anobvunza mibvunzo……..

Chikamu chekutanga: chimiro pakati pevanhu nehupfumi hwenyu nezvamuri

1.	Munemakore mangani okuzvarwa?	☐☐
2.	Makaroorwa here?	Makaroorwa……..1 Hamuna kuroorwa……..2 Murikugarisana nemurume.....3 Zvimwe (motsanangura)……4 Hapana mhinduro.....97
3.	Ndechipi chidzidzo chamakapedzisera?	Hapana.....1 Purayimari……..2 Sekondari……..3 Dzidzo yepamusoro……..4 Hapana mhinduro.....97

4.	Chitendero chenyu ndechipi?	chivanhu……1 Roma ……2 Dzechipendekosti.....3 Chitendero chevapositori……..4 Imwe yechikristu.....5 Mumoz'rimu……..6 Zvimwe (motsanangura) _____7 Hapana ……8 Hapana mhinduro.....97
5.	Parizvino murikushanda kana kudzidza?	hamushandi……..1 munoshanda……..2 murikudzidza……..3 hapana mhinduro.....97
6.	Zvamurikushanda, basa ramunoita ndereyi?	Murimurimi ……..1 Munotengesa .....2 Munoshandira vemabhizimusi……3 Hapana mhinduro.....97
7.	Murimumwe weboka rinobatsira pamibhadharo yekurapiwa?	Hongu .....1 Kwete.....0 Hapana mhinduro.....97
8.	Mumba mamunogara munavanhu vangani ndichireva ivo vamunodya navo uye muchigara mose?	☐☐
9.	Ndiyani musoro wemba yenyu?	Murume wenyu……..1 Imi pachenyu.....2 Baba venyu……3 Amai venyu……4 Mwana wenyu……5

		mukoma/hanzvadzi.....6 sekuru kana mbuya.....7 imwe wo hama.....8 mumwe(mptsanangura).....9 _____ hapana mhinduro.....97
10.	Musoro wemumba menyu anoshanda here?	hongu.....1 kwete.....0 hapana mhinduro.....97
11.	Pamwedzi woga-woga, mungati imarii inoshandisiwa mumba?	USD$.....
12.	Chirudzi chenyu ndechipi?	Manyika.....1 Matonga.....2 Mavhitori.....3 Makaranga.....4 Makorekore.....5 Mazezuru.....6 Mandau.....7 Malawi.....8 zvimwe (motsanangura).....9 _____

Chikamu chepiri:ruzivo rezvePMTCT

13.	Makambonzwa nezvechirwere chinonzi AIDS kana HIV?	hongu.....1 kwete.....0 hapana mhinduro.....97
14.	Munoziya kuti munhu anoyendepi kuti avhenekwe kuti	hongu.....1

	anechirwere cheHIV?	kwete.....0 hapana mhinduro.....97
15.	HIV inogona kutapukira kumwana kubva kunamai vakazvitakura here?	hongu.....1 kwete.....0 hamuziyi.....99 hapana mhinduro.....97
16.	Kana mati hongu, ratidzai kuti inobatira kana kuti inopararira pane imwe yenzira yedzinotevera	

	hongu	kwete	hamuziyi
pakuzvitakura	1	0	99
mukubatsirwa	1	0	99
mukuyamwisa mwana	1	0	99
mukugezesa mwana kana kumubata	1	0	99

17.	Panezvingaitwe nomudzimai akazvitakura kudzivirira kutapukira kweHIV kumwana wake kubva kwaari here?	hongu.....1 kwete.....0 ⟶ 20 hamuziyi.....99⟶ 20 hapana mhinduro.....97
18.	Panemushonga ungapiwe nachiremba kunemudzimai akazvitakura aneHIV kuti adzivirire kutapukira kwechirwere ichi kumwana wake?	hongu.....1 kwete.....0 hamuziyi.....99 hapana mhinduro.....97
19.	Munofungira kuti mushonga uyu unoshanda here?	hongu.....1 kwete.....0 hamuziyi.....99 hapana mhinduro.....97
20.	Kusayamwisa mwana kunogona kudzikisira chiyero chekutapukira kweHIV kumwana kubva kunamai vake	hongu.....1 kwete.....0

	here?	hamuziyi.....99 hapana mhinduro.....97
21.	Kubatsirwa nekuoparetwa kungabatsire kudzikisira chiyero chekutapukira kweHIV kumwana kubva kunamai vake here?	hongu.....1 kwete.....0 hamuziyi.....99 hapana mhinduro.....97
22.	Kuyamwisa mwana muchizanganisa nokumupa chimwe chikafu kana mukaka wemabhodhoro kunodzikisira chiyero chekutapukira kweHIV kumwana kubva kunamai vake here?	hongu.....1 kwete.....0 hamuziyi.....99 hapana mhinduro.....97
23.	Iyo PMTCT makanzwa nezvayo kubva kunani?	Kuchipatara.....1 Kubva kuhama kana shamwari..2 Kubva nzira dzatinonzwa nadzo nhau dzakatipoteredza.....3 Zvimwe (motsanangura).....4 Hapana mhinduro.....97

Chikamu chechitatu: zviito zvenyu, maonero nekugamuchirika kwerubatsiro rwePMTCT

24.	Ndiyani anoronga nezveutano hwenyu?	Imi pachenyu.....1 Murume wenyu.....2 Ruviri rwenyu.....3 Mumwe munhu (motsanangura).....4 _____ Hapana mhinduro.....97

25.	Munosiyendepi kubatsirwa kuchipatara chemadzimayi akazvitakura?	Pachipatara chino……..1 Chimwe chipatara……2 Hapana mhinduro.....97
26.	Muzvidzidziso zvekuchipatara chemadzimai akazvitakura makamboudzwa nezvekutapukira kweutachiwana weHIV kuvana kubva kunamai vavo?	hongu.....1 kwete.....0 hamuziyi.....99 hapana mhinduro.....97
27.	Muzvidzidziso zvekuchipatara chemadzimai akazvitakura makambopiwa mazano ekudzivirira kutapukira kweutachiwana weHIV kuvana kubva kunamai vavo?	hongu.....1 kwete.....0 hamuziyi.....99 hapana mhinduro.....97
28.	Muzvidzidziso zvekuchipatara chemadzimai akazvitakura makamboudzwa nezvekuvhenekwa kuti muneutachiwana weHIV here?	hongu.....1 kwete.....0 hamuziyi.....99 hapana mhinduro.....97
29.	Rudzi rwenyu runobvuma kuti mushandise mushonga wekuchipatara here?	hongu……1 kwete……..0 hapana mhinduro.....97
30.	Chitendero chenyu chinobvuma kuti mushandise mushonga wekuchipatara here?	hongu……1 kwete……0 hapana mhinduro.....97
31.	Makambopiwa mazano neyambiro yewutachiwana weHIV muzvidzidziso zvekuchipatara chemadzimai akazvitakura?	hongu……1 kwete……..0 hamuziyi……99 hapana mhinduro.....97
32.	Makagutsikana nemazano neyambiro iyi here?	hongu……1

		kwete……..0 hapana mhinduro.....97	
33.	Kana mati kwete, sei musina kugutsikana?		
		hongu	kwete
	mutauro wakashandiswa wanga usinganzwisisiki	1	0
	matauriro acho anga asina kunaka	1	0
	pakange pasina umbowo wakakwana	1	0
	hupo wacho wakange usina kunaka	1	0
	Imwe pfungwa(motsanangura)	1	0
34.	Makambovhenekwa kuti munechirwere cheHIV here kuchipatara chemadzimai akazvitakura?	hongu……..1 kwete……..0 hapana mhinduro.....97	
35.	Zvakange zviri zvechido chenyu here kana kuti zvakange zviri zvekusungirwa?	zvechido……..1 zvekusungirwa……..0 hapana mhinduro.....97	
36.	Kana musina kuvhenekwa chinangwa chenyu chekusavhenekwa chakange chiri cheyi?	Hongu(1)	Kwete (0)
	kutadza kukwanisa kubhadara		
	kusaziva kwekuenda		
	kunovhenekwa kwacho kunonetsa kusvika		
	kutya zvaizobudamo		
	hapana zvingaitwe nezvaizobudamo		
	hapana rubatsiro kwandiri		
	zvinozoziviswa vamwe		
	hapana nzira yandingave ndakachibatira chirwere cheHIV		

	kutya kuzosvoropodzwa nevemunharaunda		
	kutya kusvoropodzwa nevanoshanda nezveutano		
	zvimwe (motsanangura)		
37.	Kurikuti zvinenge zvabuka muvheneko zvinoratidza kuti muneutachiwana weHIV, mungade kuzivisa murume wenyu?	hongu.....1 kwete.....0 hamuziyi.....99 hapana mhinduro.....97	
38.	Kana mati kwete chinangwa chenyu chinenge chiri chii chekusamuzivisa?		
		hongu	kwete
	kutya kurohwa	1	0
	kutya kurambwa	1	0
	kutya kusvorwa	1	0
	zvimwe (motsanangura)	1	0
39.	Munofunga kuti vadzimai vanowanikwa vaineHIV vanobatwa zvakashata pano here?	hongu.....1 kwete.....0 hapana mhinduro.....97	
40.	Zvakawanda zvikonzero zvinotadzisa vanhukadzi kuwana mazano ezvekurapiwa kana kurapiwa kwacho. Kana muchirwara muchida mazano ezvekurapiwa kana kurapiwa, panezvinotevera, pangaita dambudziko hombe kana kuti kwete?		
		hongu (1)	kwete (0)
	Kuwana mvumo yokuenda kuchipatara?		
	Kuwana mari inodikwa pakurapiwa?		
	Mufambo wekubva kumba kusvika pachipatara?		
	Kuwana chekufambisa?		
	Kusada kuenda mega?		

	Kubatikana kuti munozoshaya munhu wechikadzi anokubatsirai kuchipatara?		
	Kubatikana kuti munozoshaya anokubatsirai kuchipatara?		
	kubatikana kuti munozoshaya mishonga inokurapayi?		
	zvimwe (motsanangura)		
41.	Vanoshanda nezveutano vakadzidziswa kukubatsirai mumatambudziko kana kukupayi mazano panguva yekuzvitakura. Ratidzai kuti vanokubatsirai zvakadii munezvinotevera muchishandisa izvi: 1=nguva dzose, 2=nguva zhinji, 3=dzimwe nguva, 4= havabatsiri zvachose a. dzidziso neyambiro pamusoro pekuva nepamuviri pamwechete nezvePMTCT b. Mazano anezvekuita nezveutano c. mukutarisa nekuongorora zvigozhero zvepamuviri	☐ ☐ ☐	
42.	Mungabatsirwa pachipatara chino?	hongu.....1 kwete.....0 hapana mhinduro.....97	
43.	Kana mati kwete, nemhaka yei musingade kubatsirwa pano?		
		hongu	kwete
	kuramba kwemhuri	1	0
	kure	1	0
	hamuvimbi nechipatara chino	1	0
	rubatsiro rwepano haruna kunyatsonaka	1	0
	hazvina zvazvinobatsira	1	0
	hapana veutano vechikadzi	1	0
	zvimwe (motsanangura)	1	0
44.	Mungati rubatsiro rwamunowana pano rwakadii?	rwakanaka.....1 ndizvoo.....2	

		rwakaipa……..3 rwakaipisa……..4
45.	Vashandi vepano vanoshandika navo here?	hongu……..1 dzimwe nguva.....2 kwete……..3 hapana mhinduro.....97
46.	Dai mawanikwa muineHIV maizoyamwisa mwana wenyu here?	hongu.....1 kwete.....0 hapana mhinduro.....97
47.	Kana mati hongu, munonga muchizomuyamwisa sei?	Kuyamwisa chete ……..1 Kuyamwisa nekumupa chimwe chikafu pamwechete……..2 Hapana mhinduro.....97
48.	Nemhaka yei muchiti mungape mwana mukaka wepazamu?	Ndiyo tsika yechivanhu chenyu.....1 Ndiyo nzira yakanakisa yokuchengeta nayo mwana……..2 Kushayikwa kwemukaka yevana wemumagaba.....3 Hamukwanisi kubhadharira mukaka wevana wemumagaba nekuda kwemutengo yacho.....4 Kushaikwa kwemvura yakachena yekugadzira mukaka wemwana.....5 Kutya kuratidza vanhu kuti mune chirwere cheHIV……..6 Zvimwe (motsanangura)……..7 Hapana mhinduro.....97

49.	Ingadayi kuchinzi munofanirwa kutora mushonga wePMTCT, mungamutore here?	hongu……..1 kwete……0 hapana mhinduro.....97

Chikamu chechina: kuwanika nekugona kubhadhara

50.	Zvingakutorerei nguva yakareba zvakadii kufamba kubva kumba kwenyu kusvika pano?	.....hrs.....minutes
51.	Munoda chifambiso here kusvika pano?	hongu……1 kwete……0 hapana mhinduro.....97
52.	Kana mati hongu, mubhadharo wechifambiso chacho wakakurisa here?	hongu……1 kwete……0 hapana mhinduro.....97
53.	Munowana rubatsiro here nguva dzose dzamunouya pano?	hongu……1 kwete……0
54.	Munochimira nguva yakareba zvakadii kuti mubatsirwe pamunouya pano?	.....hrs.....minutes
55.	Nguva iyi rakarebesa here kwamuri?	Hongu.....1 Kwete.....0 Hapana mhinduro.....97
56.	Nguva yekuvhurwa kwechipatara chino yakambokushatirayi here?	hongu……1 kwete……0 hapana mhinduro.....97
57.	Rubatsiro rwePMTCT runowanikwa pachipatara chino here?	hongu……1

		kwete.....0 hamuziyi.....99 hapana mhinduro.....97
58.	Kana pasina makamboudzwa kunowanikwa rubatsiro rwePMTCT?	hongu.....1 kwete.....0 hapana mhinduro.....97
59.	Nzvimbo yacho iyi, pedyo napano here?	hongu.....1 kwete.....0 hamuziyi.....99 hapana mhinduro.....97
60.	Munobhadhariswa here kupiwa rubatsiro pano?	hongu.....1 kwete.....0 → 62 hapana mhinduro.....97
61.	Izvi zvinokuremerai here?	hongu.....1 kwete.....0 hapana mhinduro.....97
62.	Kana mati hazvikuremerei sei muchidaro?	Rubatsiro rwacho harubhadharwhi.....1 Boka rekubatsira pamibhadharo yezveutano inobhadhara.....2 Ndakanzi handikodzerwi kubhadhara.....3 zvimwe(motsanangura).....4 _____
63.	Panguva yekuzvitakura makambokwereta mari yekurapiswa?	hongu.....1 kwete.....0 → 65 hapana mhinduro.....97
64.	Kana mati hongu, imarii yamakakwereta?	US$

65.	Panguva yekuzvitakura, makambotengesa midziyo yenyu here kuti mukwanise kubhadharira kurapiswa?	hongu……1 kwete……0 hapana mhinduro……97
66.	Mukuuya kwamaita pano nhasimabhadhara mari yezvinotevera:	

	US$
Chifambiso	
Mari yekuti mupiwe rubatsiro	
Mushonga	
Munhu achasara achiita basa ramanga muchifanirwa kuita musati mauya kuchipatara pamwechete nekuchengeta vana	
chikafu chamadya panguva yamanga muri pano pachipatara	
kuchaya runhare kana kutumira shoko nerunhare	
zvimwe (motsanangura)	

67.	Munoona zvichirema here kana kureruka kubhadhara mutero wezvinhu izvi?	zvakareruka……1 zvinorema……2 zviripakati nepakati……3
68.	Imba yamunogara mungati imba yakaita sei?	Imba yezvitinha yakamira yoga muyhadhi……1 Imba sedzekumusha……2 Imba yekuseri……3 Imba yemapurasitiki yekuseri ……4 Imba yemapurasitiki pazere dzimwe……5 Irhumhu imwe chete……6 Imba yevashandi……7

		Zvimwe (motsanangura).....8
69.	Madziro emba yenyu akavakwa neyi?	Zvitinha nesemendi.....1 Zvitinha zvoga.....2 Marata.....3 Mapuranga.....4 Mapurasitiki.....5 Makadhi bhodhi.....6 Dhaka nesemendi.....7 Majecha neuswa.....8 Madhaka.....9 Mauswa.....10 Zvimwe (motsanangura).....11
70.	Denga remba yenyu rakavakwa neyi?	Matayira.....1 Marata.....2 Mauswa.....3 Masibhes'tosi.....4 Mapurasitiki.....5 Makadhi bhodhi.....6 Zvimwe (motsanangura).....7
71.	Mvura yamunonwa mumba menyu inobva payi?	Mupombi.....1 Mupombi yemuyadhi.....2 Mugomba muyadhi rinoshanda nemagetsi.....3 Mutanga remvura inonaya.....4 Muyadhi yeshamwari dzemumarayini.....5

		Papombi imwe chete yevanhu vose vemunzvimbo ino.....6 Mutanga.....7 Mugomba remagetsi revanhu vose venzvimbo ino.....8 Murwizi.....9 Mutsime.....10 Zvimwe (motsanangura).....11
72.	Chimbuzi chemba yenyu chakaita sei?	Itoyireti iinemvura.....1 Igomba rakacherwa.....2 Tinoshandisa mabhakidhi.....3 Hapana toyireti pamba, tinoshandisa sango.....4 Zvimwe (motsanangura).....5
73.	Munoshandisa magetsi rudziyi pakubika mumba yenyu?	Magetsi enyika.....1 Magetsi epamba emuchina.....2 Gasi.....3 Parafini.....4 Whuni.....5 Marasha.....6 Mafuta anobva mumombe.....7 Zuva.....8 Zvimwe (motsanangura).....9
74.	Munezvifuyo here pamba penyu?	Hongu.....1

		Kwete.....0
75.	Kanamati hongu, munemombe dzingani?	
76.	Munembudzi ngani?	
77.	Munehuku ngani?	
78.	Kana muyinezvimwe zvifuyo motsanangura	
79.	Pamba penyu munemotokari here?	Hongu.....1 Kwete.....0 Hapana mhinduro.....97
80.	Paimba yenyu munetiraki here?	Hongu.....1 Kwete.....0 Hapana mhinduro.....97
81.	Paimba yenyu munebha'sikoro here?	Hongu.....1 Kwete.....0 Hapana mhinduro.....97
82.	Kana paine zvimwe zvamunoda kutaura kana kubvunza, sunungukai kubvunza kana kutaura henyu.	

Tinotenda nenguva yenyu.

Appendix 5: Sample MRCZ approved consent form for Focus Group Discussion participants

MRCZ approval number: MRCZ/B/81
REC REF UCT: 470/2009

PROJECT TITLE: ASSESSING THE BARRIERS TO ACCESSING PREVENTION OF MOTHER TO CHILD TRANSMISSION (PMTCT) SERVICES IN MARONDERA, ZIMBABWE

Principal Investigator: Ms Farai Beverley Magaso
Phone numbers: +263914177441, +27728282490

What you should know about this research study:

- We give you this consent so that you may read about the purpose, risks, and benefits of this research study.
- Routine care is based upon the best known treatment and is provided with the main goal of helping the individual patient. The main goal of research studies is to gain knowledge that may help future patients.
- We cannot promise that this research will benefit you. Just like regular care, this research can have risks that can be serious or minor.
- You have the right to refuse to take part, or agree to take part now and change your mind later.
- Whatever you decide, it will not affect your regular care.
- Please review this consent form carefully. Ask any questions before you make a decision.
- Your participation is voluntary.

PURPOSE

You are being asked to participate in a research study of assessing the barriers that pregnant women are facing in accessing the prevention of mother to child transmission (PMTCT) services**.** The purpose of the study is to determine the problems that pregnant women may be facing in accessing PMTCT services designed for their use and therefore to guide implementation strategies of scaling up PMTCT projects. You were selected as a possible participant in this study because you are a pregnant woman and therefore you are the population whose opinion the research is interested in. A total of about 20 women will participate in 2 group discussions.

PROCEDURES AND DURATION

If you decide to participate, you will be required to share your knowledge, ideas and concerns in a discussion with other pregnant women such as yourself. The discussion will be based on a semi-structured questionnaire and will take approximately 1 hour of your time.

RISKS AND DISCOMFORTS

You will not be exposed to any physical danger when you take part in this research. However, you may feel uncomfortable answering some questions and vulnerable disclosing your personal experiences. The discussion may provoke anxiety or distress as you may be reminded of some difficulties you are currently facing. There will be no negative implications of not participating in the discussion at any point in time.

BENEFITS AND/OR COMPENSATION

We cannot and do not guarantee or promise that you will receive any benefits from this study.

However, the results of this research are set to benefit you and your community in the future as proposed strategies to improve PMTCT services will be built on them. The research is intended to benefit pregnant women particularly since the PMTCT services should be made accessible to them. The greatest effort will be made to ensure results are made available to you or your community but the primary objective is to make them known to the people who make decisions about the services provided.
You will not be paid or compensated to take part in this study.

CONFIDENTIALITY

If you indicate your willingness to participate in this study by signing this document, we do not plan to disclose this information to any persons or agencies. Any information that is obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission. Study data will only be accessible to the principal investigator of the research.

VOLUNTARY PARTICIPATION

Participation in this study is entirely voluntary. If you decide not to participate in this study, your decision will not affect your future relations with this clinic, its personnel, and associated hospitals or with the University of Cape Town. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

OFFER TO ANSWER QUESTIONS

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

The date you sign this document to enroll in this study, that is, today's date, MUST fall between the dates indicated on the approval stamp affixed to each page. These dates indicate that this form is valid when you enroll in the study but do not reflect how long you may participate in the study. Each page of this Informed Consent Form is stamped to indicate the form's validity as approved by the MRCZ.

_____ _____

Name of Research Participant (please print) Date

_____ _____ AM

Signature of Participant Time PM

_____ _____

Signature of Witness Signature of Staff Obtaining Consent

_____

Signature of Interpreter (where necessary)

YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research subject or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe on telephone 04 791792 or 04 791193.

Appendix 6: Focus Group Discussion guide

What are your ages?

Where do you stay?

Where do women go for ANC and delivery in your areas? (If care sought, place and why there)

Do you have to pay for these health services?

- Services paid for

- Amount paid, other expenses encountered

What difficulties have you experienced in your search for health care?

-Concerns raised

-Expectations women have

What do other people say about services at this facility?

- Their experience of ANC

- Experience with staff

- What is good or bad

- How services can be improved

Do a lot of people use ANC services these days

- Reasons for use/non-use

- Where else do people go and why do they go there

Do you get all the information you need here regarding pregnancy, delivery, HIV, PMTCT?

What have you heard or been taught about PMTCT?

- Knowledge about HIV transmission from mother to child

- Knowledge about ways of preventing HIV transmission from mother to child

What in your opinion is the best way of feeding your baby if HIV positive?

Do you think there are any problems within achieving the goals of PMTCT here?

- Any instances where PMTCT has failed

- Areas where more attention is needed

Thank you all for your time and contribution

Appendix 7: Sample MRCZ approved consent form for health providers

MRCZ approval number: MRCZ/B/81
REC REF UCT: 470/2009

PROJECT TITLE: ASSESSING THE BARRIERS TO ACCESSING PREVENTION OF MOTHER TO CHILD TRANSMISSION (PMTCT) SERVICES IN MARONDERA, ZIMBABWE

Principal Investigator: Ms Farai Beverley Magaso
Phone numbers: +263914177441, +27728282490

What you should know about this research study:

- We give you this consent so that you may read about the purpose, risks, and benefits of this research study.
- Routine care is based upon the best known treatment and is provided with the main goal of helping the individual patient. The main goal of research studies is to gain knowledge that may help future patients.
- We cannot promise that this research will benefit you. Just like regular care, this research can have risks that can be serious or minor.
- You have the right to refuse to take part, or agree to take part now and change your mind later.
- Whatever you decide, it will not affect your regular care.
- Your participation is voluntary.

PURPOSE

You are being asked to participate in a research study of assessing the barriers that pregnant women are facing in accessing the prevention of mother to child transmission (PMTCT) services**.** The purpose of the study is to determine the problems that pregnant women may be facing in accessing PMTCT services designed for their use and therefore to guide implementation strategies of scaling up PMTCT projects. You as the health provider were selected to participate as you may have a better understanding of the problems that pregnant women are faced with.

PROCEDURES AND DURATION

If you decide to participate, you will be required to answer questions in a short interview with a trained research assistant. The interview will be based on a semi- structured questionnaire and will take approximately 20 minutes of your time.

RISKS AND DISCOMFORTS

You will not be exposed to any physical danger when you take part in this research. If at any time you feel uncomfortable answering any question, you may refuse to do so. There will be no negative implications of doing so.

BENEFITS AND/OR COMPENSATION

We cannot and do not guarantee or promise that you will receive any benefits from this study.

However, the results of this research are intended to benefit pregnant women particularly since the PMTCT services should be made accessible to them. The greatest effort will be made to ensure results are made available to you but the primary objective is to make them known to the people who make decisions about the services provided.
You will not be paid or compensated to take part in this study.

CONFIDENTIALITY

If you indicate your willingness to participate in this study by signing this document, we do not plan to disclose this information to any persons or agencies. Any information that is obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission. Study data will only be accessible to the principal investigator of the research.

VOLUNTARY PARTICIPATION

Participation in this study is entirely voluntary. If you decide not to participate in this study, your decision will not affect your future relations with this clinic, its personnel, and associated hospitals or with the University of Cape Town. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

OFFER TO ANSWER QUESTIONS

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

The date you sign this document to enroll in this study, that is, today's date, MUST fall between the dates indicated on the approval stamp affixed to each page. These dates indicate that this form is valid when you enroll in the study but do not reflect how long you may participate in the study. Each page of this Informed Consent Form is stamped to indicate the form's validity as approved by the MRCZ.

_____ _____

Name of Research Participant (please print) Date

_____ _____ AM

Signature of Participant Time PM

_____ _____

Signature of Witness Signature of Staff Obtaining Consent

_____

Signature of Interpreter (where necessary)

YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research subject or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe on telephone 04 791792 or 04 791193.

Appendix 8: Interview guide for provider interviews

1. Can you tell me about your job? What are your normal duties?
- Routine activities
- Special programmes
- Interaction with staff and community
2. What's your role in PMTCT here?
3. What's the normal practice of PMTCT here?
- How is knowledge imparted
- How is HIV counselling and testing done
- What drug regimens are used
- Do patients pay for any of these services
- Are guidelines available here
- What staff cadres are involved in PMTCT
- Is there any donor funding
4. What is the situation concerning user fees for pregnant women attending ANC?
- What services are paid for and which ones are free
- What payment mechanisms are accepted
- What amounts are charged and what are the changes over time
- Exemptions: who is exempted and how do people access exemptions
- What happens when people cant pay
5. How has the use of services changed with the change in user fees?
- Are there more or less women attending
- What factors lead people to stay away
- Where do they go instead
- What has been done to ensure their safety in these other places
6. Are there any problems in the management of HIV among pregnant women?
7. Are there any difficulties you experience in the PMTCT program?
- Do you have all the resources you need
- Are there any areas that need improvement
8. Do you believe women have any difficulties in accessing PMTCT services?
- What are the key problems they are faced with

Appendix 9: Research Ethics Committee approval letter from the University of Cape Town

UNIVERSITY OF CAPE TOWN

Health Sciences Faculty
Research Ethics Committee
Room E52-24 Groote Schuur Hospital Old Main Building
Observatory 7925
Telephone [021] 406 6626 • **Facsimile** [021] 406 6411
e-mail: shuretta.thomas@uct.ac.za

09 November 2009

REC REF: 470/2009

Ms FB Magaso
Health Economics Units

Dear Ms Magaso

PROJECT TITLE: ASSESSING THE BARRIERS TO ACCESSING PREVENTION OF MOTHER-TO-CHILD TRANSMISSION (PMTCT) SERVICES AMONG PREGNANT WOMEN IN MARONDERA, ZIMBABWE.

Thank you for submitting your study to the Research Ethics Committee.

It is a pleasure to inform you that the Ethics Committee has **formally approved** the above-mentioned study.

Approval is granted for one year till the 20th November 2010.

Please submit an annual progress report if the research continues beyond the expiry date. Please submit a brief summary of findings if you complete the study within the approval period so that we can close our file.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the REC. REF in all your correspondence.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, HSF HUMAN ETHICS
Federal Wide Assurance Number: FWA00001637.
Institutional Review Board (IRB) number: IRB00001938

S Thomas

Appendix 10: MRCZ ethical approval

Telephone: 791792/791193/792747
Telefax: (263) - 4 - 790715
E-mail: mrcz@mrczimshared.co.zw
Website:- www.mrcz.org.zw

Medical Research Council of Zimbabwe
Josiah Tongogara / Mazoe Street
P. O. Box CY 573
Causeway
Harare

MRCZ APPROVAL LETTER

Ref: MRCZ/B/81 **Date: 14 December 2009**

Ms. F. B. Magaso
University Of Cape Town
Health Economics Unit
School of Public Health& Family Medicine
Anzio Road
Observatory 7925
South Africa

RE: Assessing The Barriers To Accessing Prevention Of Mother- To- Child Transmission (PMTCT) Services Among Pregnant Women In Marondera, Zimbabwe.

Thank you for the above titled proposal that you submitted to the Medical Research Council of Zimbabwe (MRCZ) for review. Please be advised that the Medical Research Council of Zimbabwe has **reviewed** and **approved** your application to conduct the above titled study. This is based on the following: -

(a) Study Protocol
(b) Consent Forms (English And Shona)
(c) Survey Questionnaire

- **APPROVAL NUMBER** **:MRCZ/B/81**
  The above details should be used on all correspondences, consent forms and documents as appropriate.
- **MRCZ MEETING DATE** **: N/A**
- **APPROVAL DATE** **: 14 December, 2009**
- **EXPIRATION DATE** **: 13 December, 2010**
- **TYPE OF MEETING** **: Expedited review**

After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Offices should be submitted one month before the expiration date for continuing review.
SERIOUS ADVERSE EVENT REPORTING: All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices.
MODIFICATIONS: Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).
TERMINATION OF STUDY: On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices.
QUESTIONS: Please contact the MRCZ on Telephone No. (04) 791792, 791193 or by e-mail on mrcz@mrczimshared.co.zw.

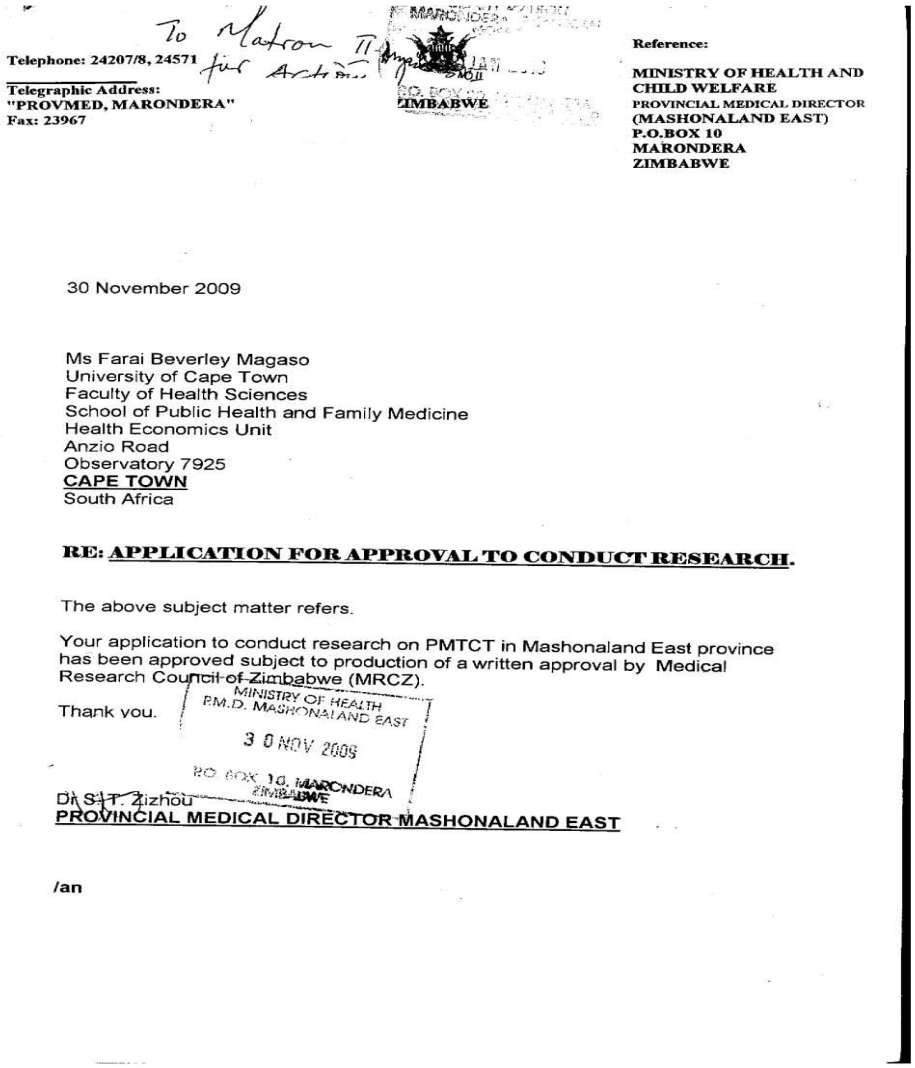
Yours Faithfully

.....
MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
APPROVED
P. O. BOX CY 573
CAUSEWAY, HARARE

PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH
Registered with the USA Office for Human Research Protections (OHRP) as an International IRB
(IRB Number IRB00002409 IORG0001913)

Appendix 11: Approval from provincial medical director of Mashonaland East



To Matron ...
for Action ...

Telephone: 24207/8, 24571

Telegraphic Address:
"PROVMED, MARONDERA"
Fax: 23967

ZIMBABWE

Reference:

MINISTRY OF HEALTH AND CHILD WELFARE
PROVINCIAL MEDICAL DIRECTOR
(MASHONALAND EAST)
P.O.BOX 10
MARONDERA
ZIMBABWE

30 November 2009

Ms Farai Beverley Magaso
University of Cape Town
Faculty of Health Sciences
School of Public Health and Family Medicine
Health Economics Unit
Anzio Road
Observatory 7925
CAPE TOWN
South Africa

RE: APPLICATION FOR APPROVAL TO CONDUCT RESEARCH.

The above subject matter refers.

Your application to conduct research on PMTCT in Mashonaland East province has been approved subject to production of a written approval by Medical Research Council of Zimbabwe (MRCZ).

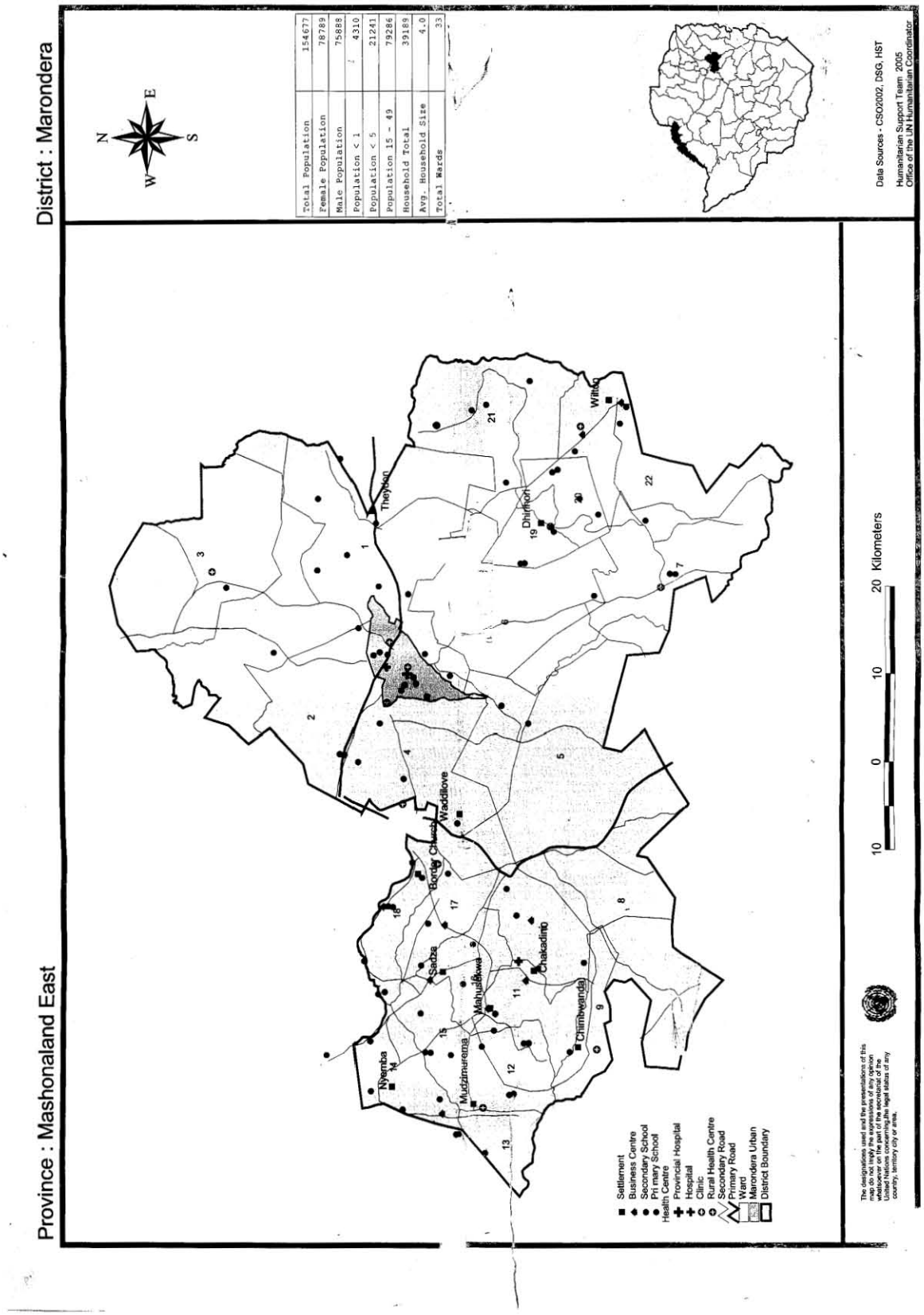
Thank you.

MINISTRY OF HEALTH
P.M.D. MASHONALAND EAST
30 NOV 2009
P.O. BOX 10, MARONDERA
ZIMBABWE

Dr S.T. Zizhou
PROVINCIAL MEDICAL DIRECTOR MASHONALAND EAST

/an

Appendix 12: Map of Marondera district



Appendix 13: Instructions for authors, BMC Health Services Research Journal

Manuscript sections for Research articles

Manuscripts for Research articles submitted to *BMC Health Services Research* should be divided into the following sections:

Title page

This should list the title of the article. The full names, institutional addresses, and e-mail addresses for all authors must be included on the title page. The corresponding author should also be indicated.

Abstract

The abstract of the manuscript should not exceed 350 words and must be structured into separate sections: **Background**, the context and purpose of the study; **Methods**, how the study was performed and statistical tests used; **Results**, the main findings; **Conclusions**, brief summary and potential implications. Please minimize the use of abbreviations and do not cite references in the abstract

Background

The background section should be written from the standpoint of researchers without specialist knowledge in that area and must clearly state - and, if helpful, illustrate - the background to the research and its aims. Reports of clinical research should, where appropriate, include a summary of a search of the literature to indicate why this study was necessary and what it aimed to contribute to the field. The section should end with a very brief statement of what is being reported in the article.

Methods

This should include the design of the study, the setting, the type of participants or materials involved, a clear description of all interventions and comparisons, and the type of analysis used, including a power calculation if appropriate.

Results and Discussion

The Results and Discussion may be combined into a single section or presented separately. Results of statistical analysis should include, where appropriate, relative and absolute risks or risk reductions, and confidence intervals. The results and discussion sections may also be broken into subsections with short, informative headings.

Conclusions

This should state clearly the main conclusions of the research and give a clear explanation of their importance and relevance. Summary illustrations may be included.

List of abbreviations

If abbreviations are used in the text, either they should be defined in the text where first used, or a list of abbreviations can be provided, which should precede the competing interests and authors' contributions.

Competing interests

A competing interest exists when your interpretation of data or presentation of information may be influenced by your personal or financial relationship with other people or organizations. Authors should disclose any financial competing interests but also any non-financial competing interests that may cause them embarrassment were they to become public after the publication of the manuscript.

Authors are required to complete a declaration of competing interests. All competing interests that are declared will be listed at the end of published articles. Where an author gives no competing interests, the listing will read 'The author(s) declare that they have no competing interests'.

Authors' contributions

In order to give appropriate credit to each author of a paper, the individual contributions of authors to the manuscript should be specified in this section.

All contributors who do not meet the criteria for authorship should be listed in an acknowledgements section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support.

Authors' information

You may choose to use this section to include any relevant information about the author(s) that may aid the reader’s interpretation of the article, and understand the standpoint of the author(s). This may include details about the authors' qualifications, current positions they hold at institutions or societies, or any other relevant background information. Please refer to authors using their initials. Note this section should not be used to describe any competing interests.

Acknowledgements and Funding

Please acknowledge anyone who contributed towards the study by making substantial contributions to conception, design, acquisition of data, or analysis and interpretation of data, or who was involved in drafting the manuscript or revising it critically for important intellectual content, but who does not meet the criteria for authorship. Please also include their source(s) of funding. Please also acknowledge anyone who contributed materials essential for the study.

Please list the source(s) of funding for the study, for each author, and for the manuscript preparation in the acknowledgements section. Authors must describe the role of the funding body, if any, in study design; in the collection, analysis, and interpretation of data; in the

writing of the manuscript; and in the decision to submit the manuscript for publication.

References

All references must be numbered consecutively, in square brackets, in the order in which they are cited in the text, followed by any in tables or legends. Reference citations should not appear in titles or headings. Each reference must have an individual reference number. Please avoid excessive referencing. If automatic numbering systems are used, the reference numbers must be finalized and the bibliography must be fully formatted before submission.

BMC Health Services Research reference style

Style files are available for use with popular bibliographic management software:

- BibTeX
- EndNote style file
- Reference Manager
- Zotero

Figure legends
The legends should be included in the main manuscript text file rather than being a part of the figure file. For each figure, the following information should be provided: Figure number (in sequence, using Arabic numerals - i.e. Figure 1, 2, 3 etc); short title of figure (maximum 15 words); detailed legend, up to 300 words.
Please note that it is the responsibility of the author(s) to obtain permission from the copyright holder to reproduce figures or tables that have previously been published elsewhere.

Preparing tables
Each table should be numbered in sequence using Arabic numerals (i.e. Table 1, 2, 3 etc.). Tables should also have a title that summarizes the whole table, maximum 15 words. Detailed legends may then follow, but should be concise.
Smaller tables considered to be integral to the manuscript can be pasted into the document text file. These will be typeset and displayed in the final published form of the article. Such tables should be formatted using the 'Table object' in a word processing program to ensure that columns of data are kept aligned when the file is sent electronically for review; this will not always be the case if columns are generated by simply using tabs to separate text.

Larger datasets can be uploaded separately as additional files. Additional files will not be displayed in the final, published form of the article, but a link will be provided to the files as supplied by the author.
Tabular data provided as additional files can be uploaded as an Excel spreadsheet (.xls) or comma separated values (.csv). As with all files, please use the standard file extensions.

Style and language
General

Currently, BMC Health Services Research can only accept manuscripts written in English. Spelling should be US English or British English, but not a mixture.
There is no explicit limit on the length of articles submitted, but authors are encouraged to be concise. There is no restriction on the number of figures, tables or additional files that can be included with each article online. Figures and tables should be sequentially referenced. Authors should include all relevant supporting data with each article.
BMC Health Services Research will not edit submitted manuscripts for style or language; reviewers may advise rejection of a manuscript if it is compromised by grammatical errors. Authors are advised to write clearly and simply, and to have their article checked by colleagues before submission. In-house copyediting will be minimal. Non-native speakers of English may choose to make use of a copyediting service.
Help and advice on scientific writing

Abbreviations

Abbreviations should be used as sparingly as possible. They can be defined when first used or a list of abbreviations can be provided preceding the acknowledgements and references.

Typography

- Please use double line spacing.
- Type the text unjustified, without hyphenating words at line breaks.
- Use hard returns only to end headings and paragraphs, not to rearrange lines.
- Capitalize only the first word, and proper nouns, in the title.
- All pages should be numbered.
- Use the BMC Health Services Research reference format.
- Footnotes to text should not be used.
- Greek and other special characters may be included. If you are unable to reproduce a particular special character, please type out the name of the symbol in full.

Appendix 14: Details of methods used

1. Face-to-face interviews

Data collection:

These formulate the basis of the quantitative section of the study. Trained researchers conducted interviews averaging 30 minutes on each participant. A fully coded structured questionnaire was the basis of the face- to-face interview. The interviewer read out the questions to the participant and where answers were coded also read out the different responses. The participant then selected their response which the interviewer marked. Since the questionnaires were available in both Shona and English the participant was first asked which language they preferred before the interview process began. Having both Shona and English questionnaires minimised the risk of misinterpreting questions by the researcher or the participant. These interviews were conducted in a secluded quiet area to afford the women some privacy so as to enhance their confidence in the process.

Limitations of method used:

Like any other interview method, the main limitation of the method is the probability of the respondents giving answers that they think are expected of them. To minimise this bias, participants were informed of the confidentiality of the interview as well as the importance of their different views.

Data reduction

Responses on the questionnaires were already numerically coded so that the data was more comprehensible and manageable.

Data analysis

Coded data from the quantitative survey questionnaires was entered and cleaned using the Epi Info program immediately after completing the interviews. Both descriptive and analytic statistics were obtained from these data through use of the statistical software STATA© (Version 10). Analysis included univariate and multivariate regressions which were conducted to identify the relationships that existed between some variables and access to health services.

To assess affordability of services, an analysis on the existence and/or extent of catastrophic health payments was conducted. If the health care expenses are large relative to the resources available to the household, this disruption to living standards is considered catastrophic (30). The idea is that spending a large fraction of the household budget on health care must be at the expense of the consumption of other goods and services. Whilst longitudinal data is normally used to estimate the extent to which living standards are seriously disrupted by the purchase of medical care, this was not possible to assess in the given cross-sectional study. A ratio of health payments-to-income was instead calculated in which payments were considered catastrophic if they exceeded some fraction of the household income within a certain

period (the full gestational period in this case) (31). Generally 5% to 10% of income is considered to be mild catastrophic expenditure whilst 15% to 40% are considered moderate to high.

An index of socio-economic status (SES) was constructed through the Principal Components Analysis (PCA) technique using ownership of household assets (32). To avoid clumping and truncation (wereby households are grouped together in a small number of distinct clusters (clumping) or an even distribution of SES is spread over a narrow range making differentiating between socio-economic groups difficult (truncation)), several variables were used including housing characteristics such as roof material and wall material, access to utilities and infrastructure such as source of drinking water, energy and sanitation facilities, and durable asset ownership such as ownership of a car, truck or bicycle (32). Indices were constructed separately for rural and urban areas to avoid misrepresentation of wealth. For instance, ownership of a bicycle, livestock and a well in rural areas indicates wealth, yet the same assets do not have value in urban areas. Therefore to avoid making all rural dwellers appear less wealthy than urban dwellers, the indices were constructed separately.

Knowledge about PMTCT was assessed through a short test included in the questionnaire. Where women answered the question correctly they were given one point. Where they answered incorrectly or were not sure they received no points. The result was then converted into a percentage for each participant.

2. Semi-structured provider interviews

Data collection:

Trained researchers conducted semi-structured interviews with providers based on open-ended questions. Prior to the interviews being conducted the researchers had to go through the interview guide, go through the consent form and practice with a partner. These interviews were conducted in quiet secluded area to avoid disruptions and to enhance privacy. The researcher, guided by a loosely-structured short questionnaire, conducted the interview by posing open-ended questions to the health provider and listened to their response which was recorded on a digital audio tape, while noting any changes in body language. In the event a new theme was introduced by the interviewee during the interview, some additional questions were asked in order to find out more information but all the questions on the questionnaire were addressed by the end of the interview. English was used during the interviews since both providers and researchers were well-versed with the language.

Limitations:

Again biases such as response bias were envisaged to surface although to a lesser extent since health providers were aware of the reasons for the study.

Data reduction and analysis:

The process of immersion/crystallisation as a method of data reduction and analysis was discussed in the protocol and manuscript sections

3. Focus group discussions

Data collection:

These FGDs were conducted with pregnant women who had attended ANC and had been notified by nurses about the potential to participate in the FGD. Two researchers took part in each discussion, one moderating the discussion while the other was taking notes and recording the discussion. The discussion was based on a loosely structured interview guide which was not strictly adhered to but was rather used to keep the discussion within certain confines. The discussion was recorded on a digital audio tape and complemented by notes taken during observation. The discussion took place in a room or outside the facility and non-participants including health providers were not allowed in the vicinity. After each discussion the researchers met and expanded the notes taken during the discussion.

Limitations:

While the FGD would stimulate debate and discussion among peers, the problem of venturing off the topic or taking too long on one aspect of the discussion was envisaged to surface. As such the 2 researchers were tasked with facilitating the discussion and keeping it within confines so as to extract all the desired information.

Data reduction and analysis:

The process of immersion/crystallization was employed to reduce the data and analyse it. This was discussed in the protocol and manuscript.